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R. Holmes
1959-61

Alaska

Journal

1959 Barrow, Wainright, Pitt Point

1960 Barrow
Census Plot Data

1961 Barrow, Wales, Kotzebue
Map of Wales & vicinity
Insect sampling, plots

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1959 Barrow, Wainright, Pitt Point

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3 June Drove from Fairbanks, Alaska SE for 150 miles (20 mi ^(Miller Creek) No. of Paxson). The habitat changed from a thickly forested region of Populus (aspen) and Picea (Black Spruce) to a sparse alpine tundra characterized by scrub willows, + Arctostaphylos uva-ursa (Bear berry) and other herbs. During the transition between these two areas the bottoms of the canyons would be wooded while the tops of the ridges or hills were of the tundra-type. 0700 - 2000.

Birds of Aspen-Spruce Habitat - 400 - 2000 ft

- Bohemian Waxwing - 1 on top of spruce tree, so. of Big Delta
Cliff Swallow - always seen near bridges where they were probably nesting

Violet-green Swallow - 1 nesting at Big Delta - others seen in Fairbanks and along road.

Bank Swallow - many seen in the excavated-gravel areas. Holes were seen in

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the cuts, but the birds were not seen close to these. Apparently nesting had not begun yet.

Raven - 2 Widgren - 2 Mallard 2

Golden Eagle - 1 Wh-w. Scoter - 6+

Solitary Sandpiper - 2 along gravel excavation ditch where water had collected.

Lesser Yellows - 2 seen in
same vicinity as Sol. Sdg.

Redpoll - Common

Gray-checked Thrush - 1 heard

Black-poll Warbler - sev. in aspens

Pileated warbler - many

Yellow warbler - several

Fox Sparrow - many

Wh-cr. Sparrow - abundant

Publ. cr. Knight - sev.

Western Wood Pewee. 1 - singing

Olive-sided Flycatcher - 1

Epidroma sp.? - 1 Alder?

Birds of higher tundra + brushy

Slopes. - 2000-3500 ft. weather
raining

Gray-checked Through-abundant

Redpoll - sev.

Wh.-cr. Sparrow - abund.

Pileolated warbler - abund.

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Fox Sparrow - sev

Raven - 2

Wandering Tattler - 1 in Road
side pond - feeding on insect
along edge of pool

Arctic Tern - 3

Short-billed Gull - 6

Marsh Hawk - 1

4 June

Fairbanks, Alaska to Fairbanks
Airport - Weather clear and warm
0600 - 0615.

Redpoll - 2

Marsh Hawk - 1 pr

- Umiat, Alaska. - Weather overcast
Much snow still present +
Willows are not leafed out
yet. - Time - 1100.

- Redpolls - sev.

- Yellow Wagtail - 2 seen
near buildings. Have a definite
flip of the tail which is
carried out repeatedly.

- Pintail - 2

- Barrow. 1200 - 1700. Weather
partly cloudy - cold. - Area still
covered with snow - very little

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tundra is exposed yet. Snow Buntings are fairly common in among the buildings but were not seen away from this area. Two Glaucous Gulls seen about $\frac{1}{2}$ of miles from A.R.L. in direction of Beach Ridge. At 2000, 1 ♀ - Mtn. Bluebird seen near Max Brewer's home west of Lab. It was noted again at 2230 in the same location.

5 June

0800-0900. ARL area, Barrow Alaska.

Weather overcast, cool, with light wind. Two Short-eared Owls near dump - flew in and settled on snow with no more activity noted. 1 Ruddy Turnstone flying by the dump.

Many Snow Buntings going through their mating behavior. This consists of variety of chasing and uttering a guttural note. Copulation was noted twice among two different pairs.

1300-1430. Same weather and location.

Only one Short-eared Owl present - seen flying over snow. Sev.

longspurs present - no pairing noted

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Snow Buntings abundant + one noted carrying twigs (or grass). Three Ruddy Turnstones seen sitting in snow. Flew off in a southerly direction uttering their alarm notes. 1 Savanna Sparrow on tundra.

1030 - ^(C. NAWU) Barrow Point, N.E. of ARL. Weather - overcast. Snow Buntings and Lapland Longspurs abundant. The buntings were noted singing while the longspurs were apparently not engaged in their breeding activities. Flock of 75 Common Eiders and 1 King Eider - flying over frozen ice towards the N.E. Several Redpolls seen.

1900 - 2005. Barrel Area behind A.R.L. Weather - light snow and SE wind. Wilson's Snipe - 1 Red-b. Sdp. - 2 and the 3 - some chasing going on, Ruddy Turnstone - sev. (6) - 1 seen chasing another for several seconds. Longspurs and Buntings abundant. Glaucous Gulls (20) present near dump area. The longspurs were performing their flight song which they had not been doing this afternoon. It consists of flying up to about

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50 to 75 feet and then "floating" to the ground on outstretched wings, and at the same time uttering a twinkling or bubbling song. The buntings also had a flight similar to this, but it was not quite as graceful (for the wings were used more in the float period and several times they would fly up before reaching the ground).

6 June Barrel Area, ARL, Barrow, Alaska
Weather mostly overcast - light, cold SE wind. Time - 0800 - 0900.
Not very much activity going on this morning. A few of the buntings and longspurs were going through their flight songs and others were singing from the ground or perches. 1 Ruddy Turnstone was present on the snow. Since the snow is covering everything except for a few small areas, the birds congregated in these exposed locations.

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A few will wander over the snow but will usually end up in an exposed area.

S.W. of HRL, Barrow Alaska 1000-1200
(Voth Area). - Many Longspurs and

buntings present on the few exposed spots. About 6 Red-b. Saps (1 coll.)

and 2 Pectoral Saps (1 coll.) were seen. Although no pairing was

apparent, the ova in the ♀ Pectoral which was collected were quite large (5 mm). Very little microtine sign was noted.

7 June Barrow, Alaska.

1100-1200 - Barrel Area. Weather overcast and moderate S.E. wind. The area is still covered with snow, and the wind is making matters worse by causing the areas which were exposed to become covered by drifting snow. Longspurs and buntings are still abundant - no songs or other breeding activity was noted (except 2 buntings in the village).

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2 Folded pages

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2 Glaucous Gulls were noted, ^{flying} So. of the A.R.L.

1300-1500. Archi Ocean - Lead. Several flocks of King and Common Eider which were mostly moving toward the N.E. A few were sitting in the water about 200 yards off shore. 1 Flock of 12 Spectacled Eiders flew by within 30 yds. The white cheek patches did not stand out too clearly, but were distinguishable. Otherwise they appeared very similar in coloration to the Common Eider. Oldsquaw in all plumages were abundant and were moving back and forth (E. + W.) along the ice pack. 4 Yellow-billed and 2 Pacific Loons were seen flying eastward. 1 Black Guillemot was 30 yds off shore and 2 Red Phalaropes were seen. Glaucous Gulls - 6 11 Pomarine Jaegers.

1800 - 1845. Barrel Area, Barrow, Alaska
Ground still covered with very few exposed areas. Buntings and longspurs

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are still very common. Also seen -
1 Dunlin, 3 Ruddy Turnstones, and 1
Glaucous Gull.

8 June Barrow Village, Barrow, Alaska

1300 - 1630 - $\frac{1}{2}$ - 1 mi So. of Village
on coastal-edge tundra. The
area here on the high bluff
is beginning to become exposed.
There are now areas 30 feet
in diameter that are exposed
which are providing a feeding
locale for shorebirds and
buntings and longspurs. There
were about 40 Red-b. Saps
and 3 Pectoral in this
area. A Ross' Gull was
seen along the cliffs near
the ice. Two Baird's Saps
were seen and 1 collected
close to the village. A tree
Sparrow was noted singing
just So. of the village.

On the return trip, we went
inland and returned to
the base by this route. This
area was still heavily
covered with snow with only
an occasional clearing.

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9 June Barrow, Alaska

1000-1100 - Drum area behind A.R.L.

The snow is beginning to melt and larger areas are becoming exposed. The wind has shifted to So. or S.W. and is a light wind. The buntings and longspurs are beginning to pair off and set up territories. Several Red-b. Saps. were feeding in the exposed area. 2 Glaucous Gulls were in the dump area.

1400-1630. Voth Area and vicinity.

This area is beginning to become exposed; however there is still a considerable amount of snow present. Longspurs and buntings are common, being seen here & there. There were many patches of exposed tundra which were unoccupied for either buntings or longspurs.

9 Pomarine Jaegers were noted flying So. over the tundra. The weather became sunny at 1500, but there was still a light S.W. wind.

2200-2300. Drum Area. Several buntings and longspurs seen.

Swarth,
C.W.
1979

Buff-breasted Sandpiper
Tryngites subruficollis

012

Meade River, North Slope Borough, Alaska

7 June

5-10 displaying ♂♂ seen among the willows on the plot. They are spaced out about 50-150 m apart and quite inconspicuous except when performing various displays. The following list describes different behaviors and displays:

Wing-up - the male extends either one (more common) or two wings (less common) vertically over its head with the white underwing facing outwards away from the bird's body. The wing is always fully extended. The bird then turns from side to side in an arc of about 90°-120°, lifting its legs and marking time as if walking in place. Every few seconds the wing is partially retracted, then flipped up again. This entire display is very effective at making the bird conspicuous among the brown willows. The tail may also be cocked up.

Flutter-jump - The bird seems to be jerked into the air .5-1 m as if pulled on a string; it throws its body upward while fluttering the wings briefly. It will do this 4-6 times in rapid succession.

disruption by
neighboring ♂

Unsuccessful 1) stopped (disrupting ♂ chased off)

Successful { 2) ♀ flies
a) off by herself
b) off with disrupter
3) steals copulation

Passive
disruption

1) ♀ flies off on own accord
2) ♂ flies off on own accord

what happens to ♀ during embrace?
Does she fly off?
Does ♂ chase her off?

(5)

E₁ → Dis₁ → ♀₂ ~~Dis~~
E₁ → Dis₁ → ♀₂

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9 June Barrow, Alaska

but there appeared to be fewer than this morning. No territorial defense or mating activity was noted among any birds. One Ruddy Turnstone and 1 mixed Sdp. were also noted.

10 June Barrow, Alaska.

1300-1600. Voth Area (No. 01) along gas-well road. The snow is beginning reduced and more birds are appearing on the tundra. Two flocks of ducks (1 of 40 Old Squaw and 1 of 20 King Eiders and several Old Squaws). Two Snow Geese were also seen. Two (1 pr) of Semipal. Sdps were collected, Red-back Sdps were quite common and 1 Baird's were seen. Snow Buntings and Longspurs were abundant with more ♀ Longspurs than present.

11 June Barrow, Alaska

1320-1630. Drum area and beyond for several hundred yards. The weather was cool and snowy. The snow is fast becoming soft

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and therefore becoming difficult to walk on. The exposed areas are becoming larger, but there is still probably ~85% snow cover on the tundra. The sandpipers were noted displaying (dunking, Blinks, + Semi-pal.) and the buntings and longspurs were all mated. Two Pintails (1 pr) were seen flying towards the N.W.

12 June Barrow, Alaska

1000-1130. Drum area. The snow is becoming soft, making travel difficult. The sdps. were still making their flight displays and were seen chasing over the tundra. Two Wh-br. Geese, 5 Pintails, and 1 Short-eared Owl were seen.

1300-1630. Drove with F.A.P. through Voth's Area, Voth's slough, and over to the Area So. of the village. The higher ridges in this area are becoming cleared of snow. However the lower areas are still covered. At least 5 Pomarine Jaegers were seen and 1 pr ^{ea} of Snowy Owls and Short-eared Owls. The shorelines are paired up with only an occasional indiv being seen.

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12 June Barrow, Alaska.

The longspurs and buntings were carrying out their flight displays. One ♀ bunting was noted carrying nesting material - near the barber-shop-bldg. in the base.

2000-2100. Drum area. Several longspurs doing their flight display. The Baird's + Semipalm were noted doing their fly U displays and two Red-tails were chasing over the tundra.

13 June Barrow, Alaska.

1000-1215. Drove out to the beach ridge and checked on snow conditions. The snow has melted some during the past two days, but seems to be slowing down. In the past, there is usually a warm spell which starts the thaw and then a colder period which halts or at least slows down the thawing, followed by a rapid melting. Apparently the snow conditions at this time are in the delayed-thaw period. According to F.A.P., the melt-off is nearly 8-10 days behind a normal year. Not many birds were seen, but a few Red-t. Scaup, buntings and

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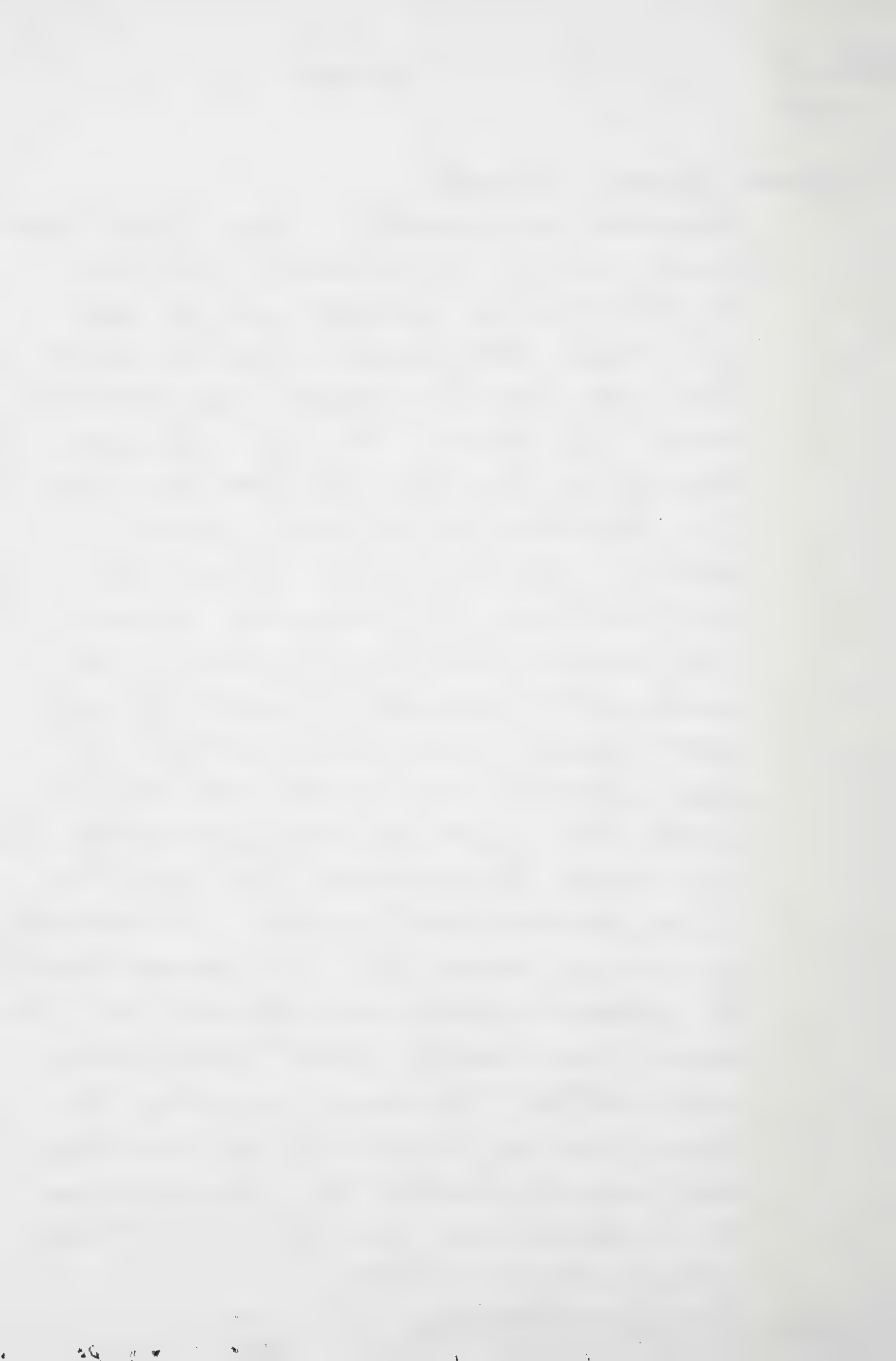
14

13 June Barrow, Alaska.

Longspurs were noted. One Short-eared Owl and 1 flock of about 20 King Eiders were seen flying over the ridge. Mike Daniels reported that there are very few eiders being seen out near the lead. Possibly they are migrating further offshore (because the floating ice is now packed along the edge of the lead) or migration is slowing down or perhaps nearly stopped. An immature cormorant (bygnar. Pelagic) was brought in by Pete (inestkimo). It had been killed a mile or two out on the lead on 11 June. Also 2 Ringed seals killed the same day. 1500-1615. Drum Area. The weather has turned cool again. The wind is now from the S.E. and is cold. The shorebird activity was almost nil. Sev. were seen feeding, but no displays were noted. The area west of the drum area is becoming very marshy, and canals of water are developing. 14 Pintails and 1 pr. of Red Phalaropes were noted in these.

14 June Barrow, Alaska.

0900-1030. Drum Area. The weather



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14 June Barrow, Alaska

is still cold today with a moderate SE wind. The birds are keeping relatively quiet with only an occasional shorebird or longspur display being seen.

1300-1630. Drove down to the 00th Area, 00th Slough, and So. of Barrow Village. The snow was soft in spite of the cold wind and melt off is still coming along quite rapidly.

Pomarine Jaegers were very common today with many seen roaming over the tundra. Three or four pairs seem to have settled down and were noted chasing other birds. 1930-2030. Plum Area. Many Jaegers were also noted in this area. Very little aggressiveness was noted, however.

15 June Barrow, Alaska

0830-0915. Plum Area. The snow continues to melt, thereby increasing the amount of standing water and making walking more difficult. The tundra is now nearly 50% exposed. The tops of the high polygons

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15 June Barrow, Alaska

are almost completely free of snow, and lemming sign is evident, at threshold less than previously expected. The jaegers still seem to be "casing". The six or about a dozen were noted in and near the drum area. Glaucous-bills were also noted, hunting in the drum area.

1000-1200. Britton's Area and gas well road and vicinity. The snow here too is melting rapidly, and with the weather as warm as it is today it will soon be gone. Very few sandpipers were seen today and the number of wandering jaegers seems to have decreased. There are, however, several pairs who seem rather settled.

1330-1630. Drum Area and tundra to the south. Jaeger are still evident in this area with many pairs sitting on the mounds of exposed tundra. One was noted catching a lemming. The tundra is becoming very marshy and will soon be clear of snow. The weather today was mostly overcast, but the sun was seen once. A fog came in in the late afternoon.

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16 June Barrow, Alaska

0900-1000. Drum Area. This area is about 50% exposed now and the channels between the high polygons are becoming filled with water. About 6 jaegers were seen sitting in the area, but were disturbed by a "weasel" which was driving thru the S. end of the area.

1300-1600. Voth area, Voth's Slough, and gasline road. The snow here is also rapidly melting and the lagoons are melting so that the water is settling on top of the remaining ice. The wind was blowing from the S. E. and made working and observing difficult.

1330. - 1930. Flew with Childs, Pitelka along the coast to the west to the monument then turned S. and crossed over the Inaruk River, continued going to the Meade and followed it to the S. until the village was reached. During this stretch several shorebirds were seen: 1 snowy owl, 2 Sh. Lark Owl, and several Glaucous Gulls. From Meade River, we flew eastward to the Colville Delta, crossed over several native fish camps, over Helmink's cabin and landed at POW 2 on Point. Over the

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18 June Barrow, Alaska and Colville Delta, Alaska
Colville Delta, Brant were seen in groups of 2 to 15. Eiders sp?, 1 Snow Goose, sev. jaegers, Sabine Gulls, and Glaucous Gulls. On the ground at POW 2, Red Phalaropes were abundant, Semi-pal., Bairds, Red-b, and Pectoral 5 sp. - Golden Plover, 3 P. tail, 15 Brant, Savannah Sparrow, and 4 jaegers. From POW 2, we flew back to Barrow along the coast. The whole tundra seems to be flooded. Due to the late season and then rapid melt-off, the water has been left standing and in many cases has inundated the polygons in many areas. The country near Meade River and vicinity has become about 75% clear of snow. The area near the coast is still 50-75% covered with snow.

18 June Barrow, Alaska

1000 - 1130. Drum Area. There are still several jaegers sitting and flying around this area. Aggression was seen only once when one bird was chased out of the drum area. The snow is melting rapidly. Weather - overcast, but no wind
1300 - 1600. Drum area to Beach Ridge and back to A.R.C. The weather has

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18 June Barrow, Alaska

continued the same. In many parts of the area behind ARL the water is standing several inches deep and the wedges between the polygons are much deeper. Also in walking in snow, the bottom half of the snow is water.

19 June Barrow, Alaska

0930 - 1230. 1330 - 1730. Beach Ridge between line of markers and gas line and then into the ARL through the drum area. Weather - clear and sunny, light southerly wind. The snow is melting rapidly and the water is several inches deep in the lowland areas. A Ranunculus was noted today.

20 June Barrow, Alaska

0900 - 1200. Beach Ridge and walked back to ARL. The snow is melting quickly, so that now probably 75% of the tundra is exposed. Water is beginning to recede on the deep pools and low places, although a great deal of the tundra is still flooded.

21 June Barrow, Alaska

0900 - 1200. Beach Ridge near gas line and now to ARL. Drive to village after lunch and then worked on Lemmings.

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21 June Barrow, Alaska

during the afternoon and evening.

F.A.P. collected a Rufous-necked Sand-piper on the beach ridge this afternoon.

22 June Barrow, Alaska

0800-1100. Beach ridge. The snow on the ridge is practically gone and the lowlands between the drum area and the ridge are still flooded. The weather was clear but windy and cold.

1100-1700. Worked on hummings which were brought in from the village.

23 June Barrow, Alaska

0800-0930. Drum Area. The tundra is now about 90% exposed with only patches of snow here and there. The only flowers out - seems to be a Ranunculus. The lagoons are becoming full of water, and many of the roads along their shores are flooded. This afternoon a channel will be cut across the village road just so. If the bore to lower the water area. The both areas road is flooded and impassable.

24 June Barrow, Alaska

1300-1500. Went across the tundra to the east census area along Elsen Lagoon

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23 June Barrow, Alaska

and then so. to Wohlsehley Slough and returned along the beach ridge and Central Marsh. The snow is fairly well gone now, only patches in sheltered spots remain. The area east of the ridge towards the lagoon is covered with 2 or 3 inches of water and the phalaropes were common here. Weather was overcast, but no wind.

24 June Barrow, Alaska

0900-1230. Beach Ridge and tundra N. to the base (ARL). This area likewise is practically bare tundra. The weather (clear and sunny) has taken care of it and the melt off has proceeded rather rapidly. The lagoons and lakes are for the most part still frozen. There is some water around the edges and in certain low spots in the ice water has collected.

1830-2130. - Drum area and AAC.S. Several ^Wthrus are now breeding in the vicinity, but nests have not yet been found. The snow is completely gone from the major part of the drum area and only small patches on the east side remain.

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25 June Barrow, Alaska

0900 - 1030. Drove to Beach Ridge and returned due to vehicle failure. Spent the remainder of the morning dissecting a male Pectoral Sandpiper. 1300 - 1730. - East census area to Wohlthly's Slough and then back along the beach ridge to ARL. The weather today has been excellent with sun and no wind (until late afternoon).

26 June Barrow, Alaska

0900 - 1230. Walked the beach ridge from the census plot westward to the gas line and thence into ARL. Snow remains only on the south side of the ridge where it is protected. The melt-off water has now run off or has been absorbed, leaving the tundra quite spongy. The weather was clear and warm ($\sim 60^\circ$) this morning and afternoon. A wind developed by late morning and continued throughout the day. By evening it had clouded up and had become cool. The afternoon and evening were spent in moving into and organizing the new lab area in writing field notes.

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27 June Barrow, Alaska

Spent the afternoon on the beach ridge in the white-rump area and the evening working in the lab. The weather was cool and overcast and windy during the morning and sunny and windy during the afternoon.

28 June Barrow, Alaska

1000-1230. Drum Area, AACS and back to A&L.

1300-1700. Set traps ^(gopher) SW of AACS and along the beachridge

29 June Barrow, Alaska

Checked traps during the morning and evening (0800-1000-1700-1930) and went out to Wobleschlo's Slough during the afternoon.

The ice went out during the early evening, and a few birds are left.

30 June Barrow, Alaska

Checked traps from 0800-1000 and then caught up on lab work during the remainder of the morning. In the afternoon, prepared for trips to Wainwright and walked out into the drum area. Then the traps were checked during the evening.

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1 July

Barrow, Alaska

The ice came back in this morning between 0700 and 0900, and now huge chunks, some up-titled can be seen jammed along the beach. A low fog persisted during the morning and again during the evening. At 1600, left Barrow and flew to Wainwright. Saw several flocks of gulls (glaucous) along the way and some snow owls near Wainwright.

Wainwright; Alaska

1700-1930. Arrived and talked to the school teacher about the humming situation. Apparently a few had been stored, and nine were purchased. On walking out to the tundra, many runways and cut grass were evident. 7-8 Snowy Owl were seen between the village and the Derline site, and owls and jaegers were reported by the natives as being fairly common. Upon leaving Wainwright and flying N.E. a few owls were seen sitting on mounds.

2 July

Barrow, Alaska

Brought in traps during the morning

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2 July Barrow, Alaska

and afternoon. Very little bird activity was noted, probably due to the strong wind and rain which has persisted throughout the day.

3 July Barrow, Alaska

The weather was extremely bad with light snow and heavy winds. The drum all were visited twice to check the nests, and traps were prepared for setting. On the beach ridge between 1400 and 1600.

4 July Barrow, Alaska

The weather is still nasty with snow flurries and rain and wind. The traps were set out in central marsh and over the beach ridge during the afternoon. Barrow was visited during the evening.

5 July Barrow, Alaska

The traps were checked during the early morning and then I wrote some letters. At 1300, Don Matkale, Ken Pizer and I went out to Nuuk and to the weather station at the pass.

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5 July Barrow, Alaska

The weather is still extremely bad, although the clouds seemed to have lifted by 2200.

6 July Barrow, Alaska.

Went to the beach ridge and central marsh to check the traplines and then spent the remainder of the morning in the area between the drum area and A.A.C.S. The afternoon was also spent in the same locality. The drum area was visited in the evening. The weather was mild.

7 July Barrow, Alaska

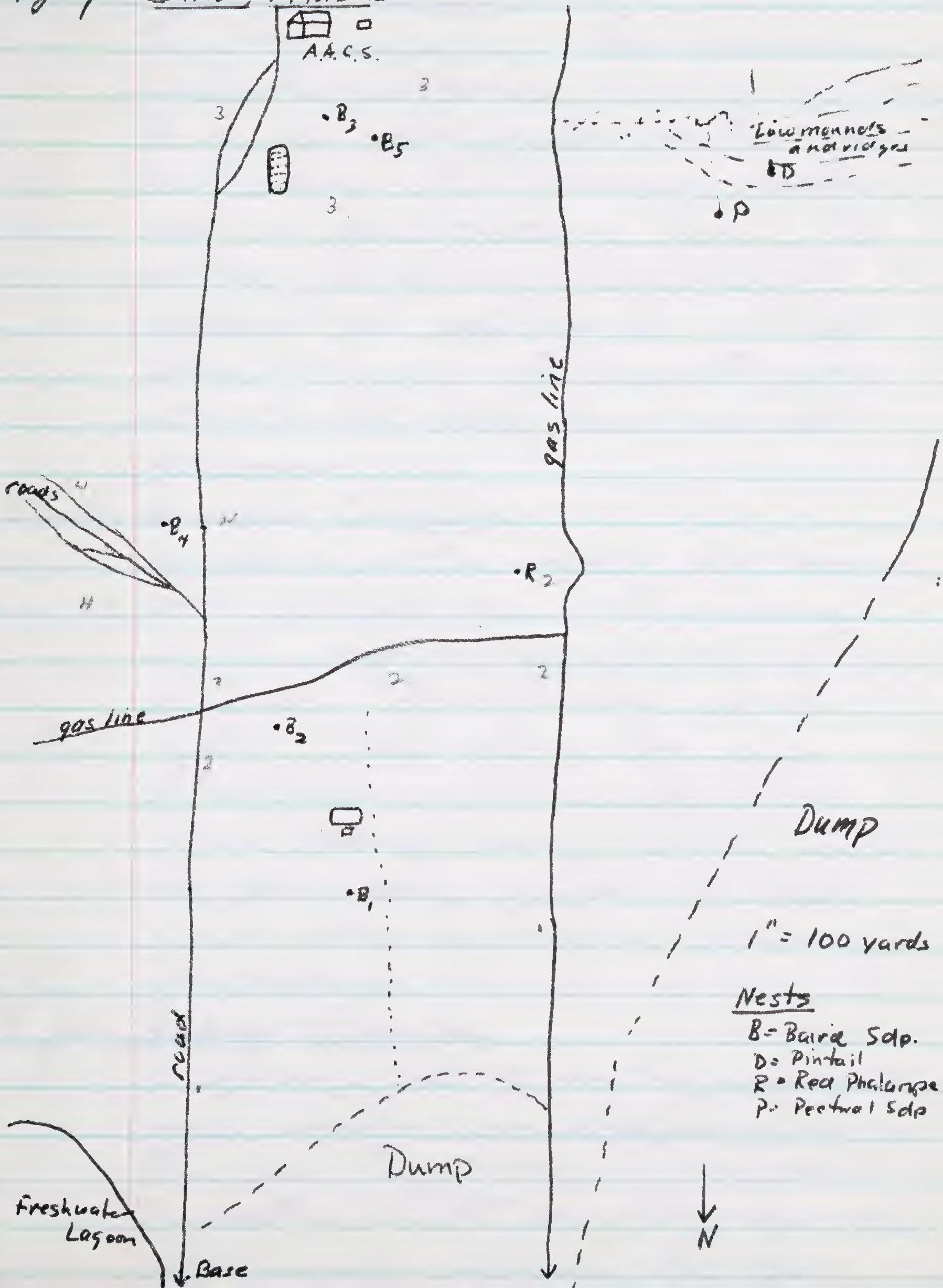
Checked traps again during the morning and drove to Wohlschlag Slough and the east census area and then returned via the beach ridge. The snow is completely gone in this area, and Elson Tagoon now has a ring of water (30 yards across) around it, but the center is still ice. The afternoon was spent near A.A.C.S., and the map of nesting birds on the following page was prepared. The weather was overcast during the entire day and there was a light breeze. During the late afternoon, there were several showers and about

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7 July Barrow Alaska



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7 July Barrow, Alaska

The last evening. The traps were collected between 2130 and 2300. The ice is still present in the lagoons but seems to be becoming softer and is melting away from the shores. The sea ice is now packed against the shores for as far as one can see. The insects were extremely bad today during periods of no wind.

8 July Barrow, Alaska

Worked in the lab all morning and went to Voth's Area in the afternoon to set the traps. Two lines were set. The mosquitoes and flies were extremely bad - there being very little wind. The drum area was checked and moves taken during the evening.

9 July Barrow, Alaska

A strong (30-35 with gusts to 45 mph) wind was blowing from the sea. By 0800, the ice had mostly left and the sea was extremely choppy. The traps

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9 July Barrow, Alaska

were checked at 0800 and again at 2200. Otherwise, the wind suppressed all activity. The ice remained away from the coast except for small chunks.

10 July Barrow, Alaska

The traps were checked in Uth's Area at 0800 and 2000. The morning was spent in setting more traps in an intensive trap-grid. The afternoon was spent talking to Dr. Pruitt from Univ. of Alaska and a short trip out to A.A.C.S. The winds have diminished and now are a light breeze ~~now~~ blowing. The sun was out intermittently today.

11 July Barrow, Alaska

Traps checked during the morning and two ~~III & B~~ were collected in the late afternoon. The weather today was cloudy with a SW, NW or W. wind. The ice flow was on the horizon in the late evening.

12 July Barrow, Alaska

Traps checked in the morning and then trapsmen II and B were set in the afternoon. The weather was generally good, with a light wind.

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13 July Barrow, Alaska

Checked Traps in the morning and afternoon. The weather was poor with snow and heavy wind. The nests near A.A.C.S. were checked during the afternoon.

14 July Barrow, Alaska

Traps were checked in the both areas at 0800 and then went down to Footprint Lake and the vicinity of the gaswell. The lake has been drained, but still contains patches of standing water which is nearly impossible to wade through. However by skirting the standing water, travel is quite easy.

15 July Barrow, Alaska

Footprint Lake and vicinity was again visited and the nests here of Skuas were examined. The lake still is mostly covered with ice.

16 July Barrow, Alaska

Pitelka left in the morning for Berkeley. During the afternoon, Daniel and I went to the Birch ridge, Elson Lagoon and Wohlshlag Slough. The nests near A.A.C.S. were also checked. Weather - windy, clear

17 July Barrow, Alaska

A.A.C.S. was visited in the morning and then the rest of the day was

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17 July Barrow, Alaska

Spent working on specimens, etc. The weather was very windy with some snow flurries.

18 July Barrow, Alaska

A.A.C.S. was checked during the morning. The Footprint Lake was again visited during the entire afternoon and evening. A Calving Whale, ♀, was killed and brought in at 1500. By 1809 when we arrived there it was chopped up and little could be seen.

19 July Barrow, Alaska

The morning was spent so. of Footprint Lake, and the afternoon was spent watching another whale (gray) being cut up. Lice and barnacles were collected and she was lactating freely. It was nearly 45 feet long.

20 July Barrow, Alaska

The jaeger nests were checked, and one was fenced in. Weather windy, but clear. A trip was made out almost to Nuuk. Two old walrus carcasses were found and also several dead Pallas' Murres.

Holmes, R.
1959

Journal

32.

21 July Barrow, Alaska

The weather today was cold and foggy.

The day was spent catching up on lab work and preparing some specimens.

22 July Barrow, Alaska

A trip was made to Voth's Area and Footprint Lake to check the traps

and the jaegers and shorebirds.

The afternoon ^{evening} was spent in preparing specimens.

23 July Barrow, Alaska

The afternoon was spent near Footprint Lake and Voth's Area. Very little animal activity was noted except for the jaegers which were milling around.

24 July Barrow, Alaska

During the morning, the area around ATCS and the Beach Ridge was checked for any young birds, etc.

The afternoon was spent in Voth's Area and along the ridge to the south.

25 July Barrow → Wainwright, Alaska

Schultz, Piper and I departed from Barrow at 1100 and arrived at Wainwright at ~1200.

Very little bird activity was seen (8 Snow owls and 1 Jaeger +

Halmer, R
1955

Journal

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25 July Barrow \Rightarrow Wainwright, Alaska
gulls and terns along the coast.
From 1200 to 1830, soil samples
were taken and talks were
made with the school teacher and
the natives. Very little hummingbird
activity was seen on the walk
into the tundra. On the return trip
(1830-1930), at least 1500
were seen and 4 jaegers. Otherwise
everything was quiet.

26 July Barrow, Alaska

Today was very windy and cold. The
work in the lab was caught up to
date and the traps were checked
in Voth's Area.

27 July Barrow, Alaska

Voth's Area was visited during
the morning and afternoon to determine
the intensive trapping sites. Then in
the ^{late} afternoon a trip was made so
along Voth's Slough to Footprint Lake.
The weather was chill windy, but
there was no rain.

28 July Barrow \Rightarrow Pitt Point (POW), Alaska
Due to a low fog, we had to fly
low so predators could be
seen. Only two owls were seen.

Holmes R.
1959

34.

28 July Barrow = P.H. Point, Alaska
on the entire trip. on about
10 mi SE of Barrow and on
about 3 mi SW of P.H. Point. No
jaegers were seen. Also no
predators were seen at Cape
Simpson. At P.H. Point, very
little sign was seen of
lemmings and no predators.
The traps were located and
sites for new ones were investigated.

29 July Barrow, Alaska
The morning was spent in Voth's Area
setting out two trapping grids.
The afternoon was also spent in the
above activity, in addition to a
trip to the SE end of Footprint Lake.

30 July Barrow, Alaska
The weather today was cold and windy
(NW - 20-30 mph). The morning was spent
in the drum area and lab. ^{Dum} The
afternoon, traps were placed in Site B
and Voth's Area was checked.

31 July Barrow, Alaska
The traps were checked in Voth's Area
during the morning, and a trip was
made to Central marsh and
Wohlschlag's Slough during the afternoon.

Holmes, R.
1959

Journal

35.

1 August Barrow, Alaska

The traps were checked during the morning and Voth's area was checked for birds. Only a few Baird's Sandgrouse and Long spurs were found. During the afternoon, I went to Footprint and Ikroavik Lake to check on bird conditions in general. The evening was spent in preparing specimens. Weather clear, light rain.

2 August Barrow, Alaska

The traps were checked, and specimens were put up. We were anticipating a plane trip which did not materialize today. Weather overcast - moderate wind.

3 August Barrow, Alaska → POW 2, Alaska

Departed at 1000 for Beecher Point and Gravel Island off the coast. We landed on Co He Island (4 mi N of Beecher Point) and walked around for about 30 minutes. The vegetation here was quite similar to that near Nuwak and other shore communities. Gravel surrounded the main part of the island which was composed of a slightly polygonized tundra. Only 2 Baird's Sandgrouse and Snow Buntings were seen. No

Holmes, R.
1959

Journal

36.

3 August. Barrow ~~to~~ Pow 2 (Islands), Alaska
sign of eider or tern nesting was
evident. After leaving the bar we
flew over Thetofa Is which
was reported as a good eider place
by Pete Savvich. The sea was too
rough to land, but no eiders or terns
could be seen from the air. Arctic Terns
and Sabine Gulls were present in
small numbers. On the return trip
a stop was made on the Colville
Delta to drop Mike Daniels off for
a two weeks stay. Returned to Barrow 1630.

4 August Barrow, Alaska

Footprint Lake, with Area and place
between were visited and checked
for birds. A few shorebirds
were present on Footprint Lake. Shorebird
bird activity is rather low. The
weather was sunny with a cool
NW wind.

5 August Barrow, Alaska

The morning was spent in the lab
preparing specimens and writing field
notes. The beach ridge was checked
during the afternoon and the
area between AR6 and the ridge
was walked. During the evening.

Holmes, R.
1959

Journal

37

5 August Barrow, Alaska.

Walters and I drove to Nuwak and The Pass. After returning, the traps were checked in Voth's Area. The weather was overcast, cool and windy (NE 10-15 mph).

6 August Barrow, Alaska.

Cade arrived at ARC last night from his Colville Trip. The morning was spent at ARC working on specimens, and ^{during} the afternoon lab work was caught up and field notes written. At 1800, Footprint Lake, Voth's Area & vicinity was visited. More shorebirds were present with flocks of Pectorals, Semi-pals + R. Phalaropes being present. They were only seen among the rocks and moist areas in the lake bottom.

7 August Barrow, Alaska.

0800 - 1100. - Beachridge - Gas line ridge, east to Olsen Lagoon and Ikpile Slough, north west to Wobahly Slough and then west to Central Marsh and ARC. Many shorebirds were arded between the 2 sloughs with Semi-pals being the most abundant. Longpurs were also present in flocks of 10-20 and were apparently moving.

Holmes, R.
1959

Journal

7 August Barrow, Alaska

1300-1700 - Footprint Lake and vicinity was checked for bird activity. Many shorebirds were seen, and several were collected. The evening was spent in preparing specimens.

8 August Barrow, Alaska

Lab work was finished up in anticipation of leaving for Pitt Point by 12 o'clock - noon. Since the weather became foggy and rainy, the trip was postponed.

9 August Barrow, Alaska

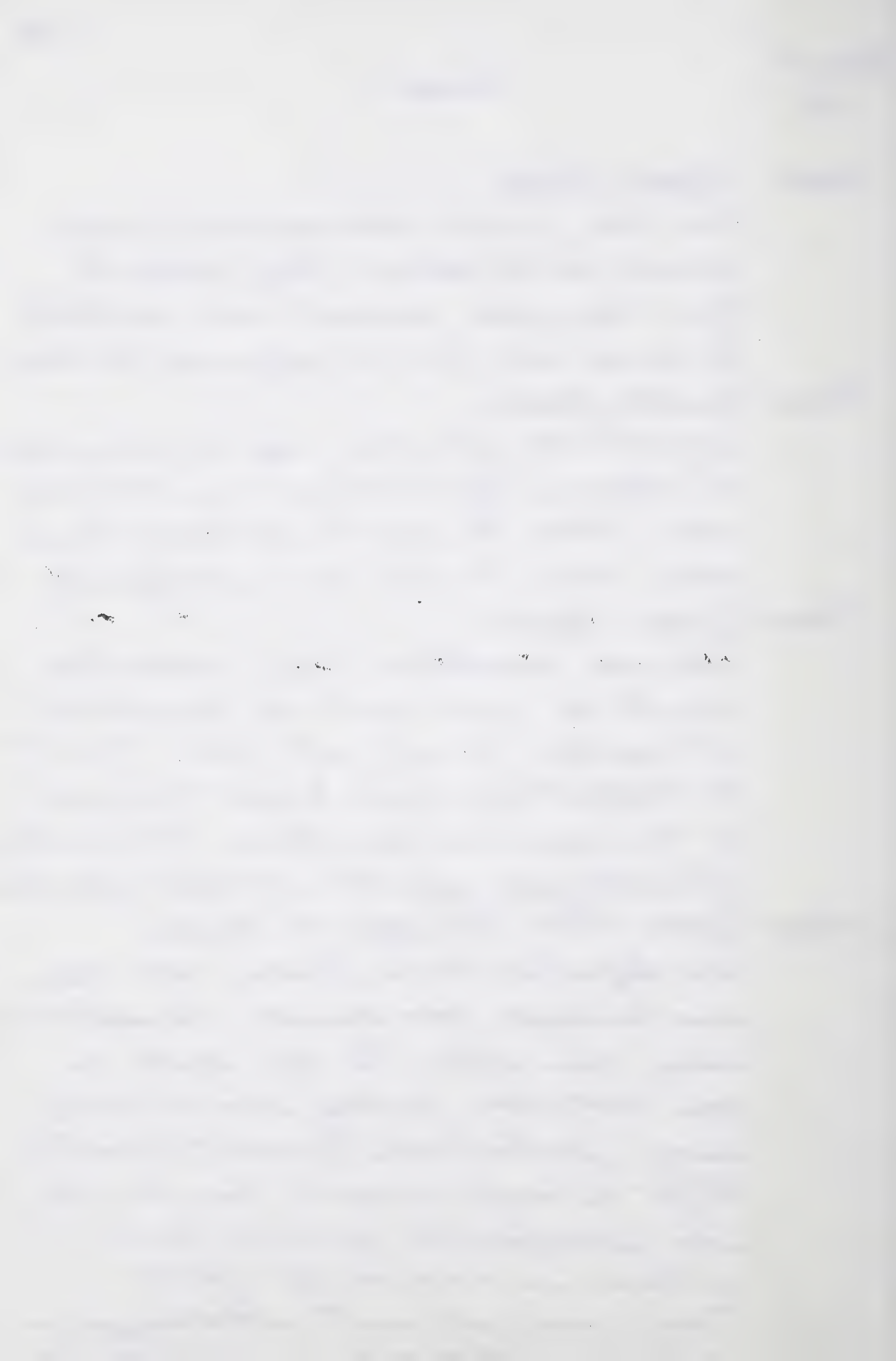
Today was another foggy, rainy day, so it too was spent in expectation of leaving. Finally, at 7400 - I went to Footprint Lake for 2 hours to check on the shorebird populations. The remainder

of the day was spent in preparing specimens.

10 August Barrow → Pitt Point → Umiat - Alaska.

We departed from Barrow at 1330 and headed for Umiat. Heron (30-40) were seen along the way and a gray wolf was noted about half way in between Barrow & Umiat. After a half an hour's stop in Umiat, we proceeded to go to Pitt Point where we arrived at 1630.

Traps were set out after supper and some observations were made.



Holmes, R.
1959

Journal

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11 August Pitt Point, Alaska

The traps were checked from 0800 to 0900, and the remainder of the morning was spent in looking around and taking care of the specimens. During the afternoon, I walked west about 2 miles then circled around and came into the base by the east. Longspurs seem to be the most abundant bird, and sandpipers are not too common.

12 August Pitt Point, Alaska

The traps were checked morning + evening, and new trap sites were investigated. Line #4 was laid out, and a tentative location was picked for line #3. The weather today was partly cloudy with a strong NE wind. Very little bird activity was noted, presumably due to the wind.

13 August Pitt Point, Alaska

The traps were checked in the morning and a walkway made around the bases to check on possible trap line sites. During the afternoon, line

Holmes, R.
1959

Journal

40.

13 August Pitt Point, Alaska

#4 was laid out, and then after dinner, the traps were collected from the old line and set out on the two new ones. The weather again seemed to depress bird activity. The wind (still N-NE) was blowing at 30-35 mph.

14 August Pitt Point, Alaska

The traps were checked morning and evening and several walks were made to the south. The weather again was overcast and windy. Little bird activity was noted.

15 August Pitt Point, Alaska

The traps were checked again during the morning and evening. A cold fog settled down, and this combined with a 20-25 mph wind made for rather uncomfortable field conditions.

16 August Pitt Point, Alaska

The traps were checked in the morning and were checked and collected during the evening. A walk was taken NE of the base, but little activity (microtus & birds) was noted.

Holmes, R
1959

Journal

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16 August Pitt Point, Alaska

The vegetation here at P.P. is very similar to Barrow and Wainwright. Dryopteris, Carex Eriophorum seem to be the most predominant. There are a few herbs that seem to be different (e.g. - yellow composite), and the willows seem to be growing a little higher and shrubbier - although they aren't over 2 or 3 inches from the ground. The terrain is also similar: flat with occasional ridges. There seems to be very few areas of well-developed polygons.

17 August Pitt Point, Alaska

Waited for the plane all day and caught up a lot of work.

18 August Pitt Point → Barrow, Alaska

The plane arrived at 1130 and then we left immediately. Due to low fog, no birds were seen on the return flight. Traps were laid during the remainder of the day.

19 August Barrow, Alaska

The traps were checked in the morning and Footprint Lake and vicinity were visited in the afternoon. The species

Holmes, R.
1959

Journal

42.

19 August Barrow, Alaska

composition of birds has changed greatly during the last week.

Red-bocks are now the most abundant with Rowitchers second. Pectorals seen scarce. The tundra seen very dry with many of the pools having dried up. Fresh lemming workings were noted in area of high polygons or mounds. Jaegers seen scarce, but owls are seen occasionally. Two more trapline and intensive plots C + D were laid out during the late afternoon and evening.

20 August Barrow, Alaska

Traps were checked morning and evening, and lab work was worked on all day. The weather was poor - overcast with low fog and strong NE wind.

21 August Barrow, Alaska

Work was completed in the lab during the morning, and trap line were checked morning and evening. A trip was made

Holmes, R.
1959

Journal

43.

21 August Barrow, Alaska

to Footprint Lake during the afternoon. Birds were still abundant on the lower part of the lake. A few Pectorals were noted just n. of the lake on the marshy tundra.

22 August Barrow, Alaska

Traps were checked in the morning, and 2 hns were taken out in the evening. Lot work was done, and Mike Solomon arrived back from Umanat with 50-60 week-old unfrozen micistines. Work was begun on these animals.

23 August Barrow, Alaska

Footprint Lake, Voth Area, Br. Heron Area were all checked with fewer birds being present. Traps were set in Central Marsh & that area & the Beach Ridge were investigated. Very few birds were noted in that area. Four Sandhill Cranes were seen in the evening near Voth's Area.

24 August Barrow, Alaska

Traps were checked and 2 more hns laid down. Lot work was continued.

Holmes, R.
1959

Journal

44

25 August Barrow, Alaska

Traps checked morning and evening, and Central Marsh and Bead Ridge checked for birds both times. A few lone Pectorals were encountered in the morning and one flock of 9 were seen. In the evening a few Red-brooks or west. Pectorals were noted. Otherwise little was seen.

26 August Barrow, Alaska.

Traps were checked in the morning and evening, and 2 lines were taken out. Little bird activity was noted - that area of Central Marsh. Footprint Lake, Ikroo-ik, and adjacent area were visited with moderate numbers of shorebirds being present in the wet marsh areas. Footprint Lake had a higher concentration than any other area. Lowell Douglas reports that the condition of the grasses & sedge this year is quite poor - at least as compared to the past three years. Evidently the growing season has not been

Holmes, R.
1959

Journal

45.

26 August Barrow, Alaska.

productive enough to allow the plants to attain their "normal" heights. It will be interesting to see how this affects next year lemming and shorebird activity (in the latter case, in relation to nest cover, etc.).

27 August Barrow, Alaska

Traps checked in the morning, and Wohlsehlog Slough & other area adjacent to Elson Lagoon were visited. Very little bird life was found. The afternoon was spent working on the microtine from Umiat. The evening was spent out toward the point & Nuwak. Two lines of traps were brought in.

28 August Barrow, Alaska

Lot work was completed during the morning. Bill Maher, M. Daniels & I went to Footstep Lake and vicinity in the afternoon & also checked Freshwater Lagoon. Little shorebird activity seen. Traps were set out north & south area.

Holmes, R.
1959

Journal

46.

9 August Barrow, Alaska

Traps were checked in the morning and two more lines were laid in the late afternoon. Lab work was continued (18 Lemmings caught in the traps last night + several shrews + microtus from umiat). The weather was very poor with rain and low fog.

30 August Barrow, Alaska

Traps checked during the morning and evening. Voth's Slough was checked and it was found to be too wet for traplines (rained the last day + a half + made conditions worse). The two lines located in this slough (XI, XII) were located. It was found that most of the stakes have been removed or are hidden from view due to the tall grass. Lemming activity looked good in certain portions of the slough. Runways, etc. were well defined.

31 August Barrow, Alaska

Traps checked in morning and evening, and two lines were brought in. The lemming picture looks better with more lemmings being caught.

Holmes, R.
1954

Journal

47.

31 August Barrow, Alaska

than in ^{the} previous trapping period. Runways and runways are well defined through use. Lab work was completed in the morning, and a trip was made to Footprint Lake during the afternoon.

1 September Barrow, Alaska

Traps were checked during the morning and evening. Lab work was done during the remainder of the day. The weather was poor with low fog and strong S.E. wind.

2 September Barrow, Alaska

Traps were checked in Voth's Area during the morning and were picked up in Intensive Removal Plots C + D (Beach Ridge) during the afternoon. Work was continued on the Umia material.

3 September Barrow, Alaska

More work was done on the microtomes from Umia, and Carl's specimens were prepared for shipping. Voth's Area and the area south of there were visited (briefly due to weather difficulty). More

Holmes, R.
1959

Journal

48.

3 Sept. Barrow, Alaska

Specimens were processed during the late afternoon and evening, and book work was done. The tundra has become quite brown during the last few days. The temperature has also dropped and is now quite cold. Winds and heavy fog have persisted during the last 6 days.

4 Sept. Barrow, Alaska

Snow was present on the ground this morning, and the ponds were frozen over. Snow flurries, wind and cold weather in general persisted all day. Work was continued in the lab.

5 Sept. Barrow, Alaska

More Umiat specimens were processed this morning. Bill Mabe returned from the field at noon. The afternoon was spent in the vicinity of Footprint Lake & Voth's Area. Birds were very scarce. Three lemmings ^{were} seen.

Owls were noted here & there (about 4 seen) and owl mounds were checked. Very few fresh pellets were found in the mounds.

Holmes, R.
1959

Journal

49.

5 Sept. Barrow, Alaska

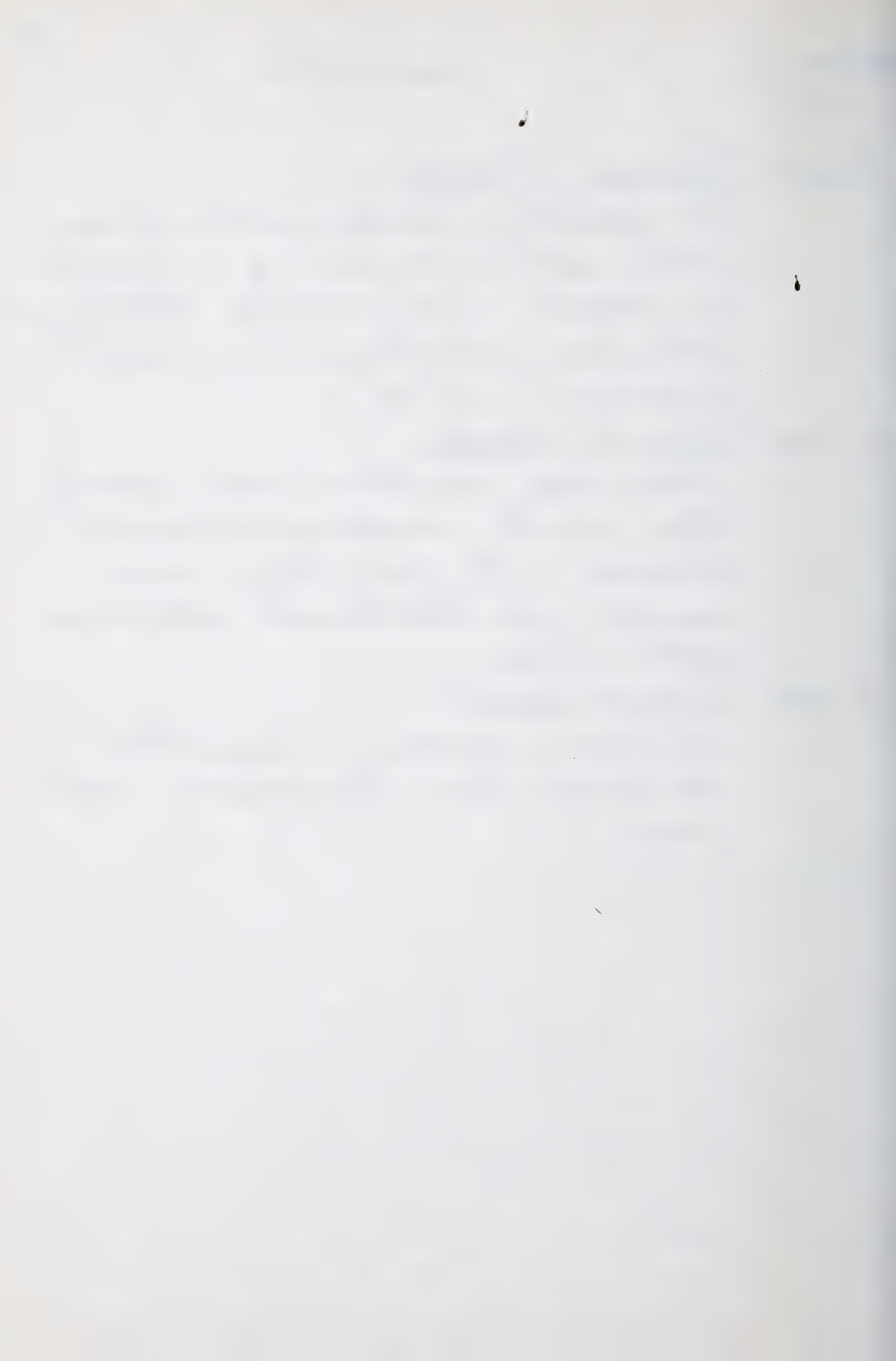
The weather today was again cold, with snow & a cool SE wind. The ponds in Footprint Lake were all frozen over with approx. $\frac{1}{4}$ " of ice.

6 Sept. Barrow, Alaska

Today was another cold windy day with intermittent snow & rain. A short trip was made to Footprint Lake via Voth's Area.

7 Sept. Barrow, Alaska

Snowing again. Departed on Wren for Fairbanks at 1000.



R. Holmes
1959-61

Alaska

Journal

1960 Barrow
Census Plot Data

Holmes, R.
1960

Journal

1.

28 May Barrow, Alaska

Arrived at Barrow via Udon Airline at 1030. Spent the afternoon walking out to the beach ridge and back to base. The snow conditions here are as follows. It seems that the state of melt off is later than it was on 4 June of last year. The beach ridge is partially exposed along the top, and relatively large patches are present in the drum area. The most amazing thing is the presence of many lemmings. During the $3\frac{1}{2}$ hour walk, an estimated 100 lemmings were seen; five were collected. Upon approaching a large open area, usually 6-7 animals could be seen out in the open, feeding on the vegetation. As soon as I approached too close, they would all scurry to the edge of the snow. The condition of the vegetation was especially noted. There is hardly a block of grass or stalk of sedge that has not been bitten off. One can run his foot across the vegetation & take away all of this vegetation material. This condition exists on the polygon tundra as well as in the troughs (as well as they could be checked).

Holmes, R.
1960

Journal

2.

28 May. Farrow, Alaska

Also underneath this matted grass were numerous lemming droppings; wherever the grass was scraped these pellets could be seen.

The presence of birds was not particularly good. One ♂ Snowy Owl was seen along the ridge, just east of the beverage antennas. Numerous Pomarine Jaegers were seen, but combat was not observed. Several times 3 or 4 birds would be flying together. Glaucous Gulls were seen in small numbers; all were flying high. Snow Buntings + Alaska Longspurs were both singing. No shorebirds were seen, but 2 dunlin were noted on the 25th near Voth's Area by Maher.

In the evening the eastern end of the beach ridge + Wohlsehlog's Slough was checked. Wherever the tundra was exposed, the grass had been clipped + lemmings could be seen moving back and forth across these patches. Pomarine Jaegers were noted quite commonly throughout the area (about 20/sq mi - estimate). Several instances of establishment were noted + displays were seen twice.

Holmes, R.
1960

Journal

3.

29 May Barrow, Alaska

Drive to Voth's Area, Footprint Lake & The North end of Ikroavik this morning. The snow cover is still fairly continuous. In Voth's Area some of the higher places are exposed; otherwise only a few open areas were seen. Lemmings were abundant; numerous individuals could be seen on an open area [one sock area - 15x20 ft had 14 lemmings grazing in the open at one time]. They were even common in the floor of Footprint Lake where several individuals were seen and the grass was heavily cut. Jaegers were present throughout the area, and many appeared to be settled. No owls were seen.

During the afternoon, the beach ridge, gas line ridge, Wohlsehlog Slough & Arls, in between was checked. The same story held true for lemmings here as mentioned above. They could be seen running everywhere. (The weather today was overcast with a cold westerly wind blowing). Several flocks of arctic were seen (150, 16, 2 + occas. indiv) flying southward over tundra. Species could not be identified.



Holmes, R.
1960

Journal

4.

30 May Barrow, Alaska

Spent the day working in the lab due to the poor weather conditions & lack of transportation. In the evening, I went over to Voth's Area, Village Slough & vicinity. Lemmings were as active as ever and 30 were collected near Voth's Area in less than half an hour. No owls were seen in this region again, but jaegers were plentiful. Also no shorebirds were present.

31 May Barrow, Alaska

The morning was spent along the beach ridge, Wohlseh Slough, Ikyik Slough & Central Marsh. Lemming numbers remain high with a count of 46 animals feeding in an exposed area of 15×35 feet. Similar estimates from other areas were obtained. It was noted several times that the jaeger was sitting on a piece ofundra & lemmings would be running back and forth in front of them; the birds apparently have enough food & have no interest in these animals.

The number of melanistic lemmings

Holmes, R.
1960

Journal

5.

31 May Barrow, Alaska

Caught this year seems unusually high. According to Max Brown, one was caught early this spring & is now in the freezer. Another was picked up by Mullin & me by Maher. Both of these died. Today, I found one near Wohlsholz Slough, and one was brought in by a boy in the village. These two are still alive & will be kept for breeder purposes, if possible.

The evening was spent over near Elson Lagoon. This seems to be the only place where shore birds are seen. With the exceptions of 1 dunlin on the west side of Ikroavik Lake & 1 in the dunes, all other shorebirds seen by Maher & myself have been along the shore of Elson Lagoon near Wohlsholz & Ikroavik Sloughs.

1 June Barrow, Alaska

Drove to the west shore of Ikroavik and checked for census areas. The ridge along the shore is about 75-100 yards wide with a shelf running out towards the lake, which is about 200 yards wide. This area which begins about 1 mile south of the north end of the lake, extends for 1½-2 miles

Holmes, R
1960

Journal

6.

1 June Barrow, Alaska

and should make a good study area. The parts to the west of this look low & flat & will probably be marshy once the snow melts. No shorebirds were seen in the area at the time. Two sites of owl activity were noted. One a nest situated 1.7 mi south of the north end of the lake on the edge of a trough? This nest contained 4 eggs & was completely surrounded by snow. The 2nd was a depression in the tundra (on a mound) which had the appearance of a nest, but no eggs were there. There were, however, 29 dead lemmings which were in fairly fresh condition lying around this depression. A ♂ owl was seen in the vicinity. Lemming sign in this area looked similar to condition near the beach ridge, etc; but fewer lemmings were actually seen. Joeger activity was "normal". A group of joegers (21) were seen sitting on the ice at Ikroavik.

In the afternoon, the shore of Elson Lagoon was checked for shorebirds & one duck was seen displaying. 3 Pectorals; 1 Semi-palm, & 2 R. Turnstones were also seen.

Holmes, R.
1960

Journal

7.

2 June Barrow, Alaska

Spent the morning checking owl nests toward the west. The results of their activity is listed in the species accounts. Jugs are scattered north in pairs, or the area both a exposed locality & a place still snow covered. Another melanistic lemming was caught, this time just No. 1 within Area.

Shorebird activity was slow with only a couple of red-bills displaying heard. Three turnstones were seen near Britton's Area.

In the evening, Maher & I went west again to census his area & check on more owl activities.

3 June Barrow, Alaska

Shorebird activities were checked near Elson Lagoon and the beach ridge during the morning. The birds are increasing rapidly, and more can be heard displaying daily.

Several locations on the beach ridge were censused for lemmings. Three plots were established along the crest of the ridge; all consisted of approx. $\frac{1}{3}$ acres of exposed tundra surrounded more or less completely by snow. The results are presented

Holmes, R.
1960

Journal

8.

3 June Barrow, Alaska

below. (The number of lemmings on the open area was counted 3 times, 15 minutes apart. Only the highest figure is given).

Plot # 1 - No. Beach Ridge

- Area - $90' \times 96'$ - 10% snow
lemmings - 12

Plot # 2 - Mid beach ridge

- Area - $99' \times 132'$ - 20% snow
in patches
- lemmings - 33

Plot # 3 - So. Beach ridge

Area - $90' \times 108'$ - 25% snow
(in patches)
lemmings - 19

The plot areas were paced to obtain the dimensions.

Earlier censuses by Maher & myself were higher due to the concentration of animals into the small exposed areas. (One of Maher's counts - 132 animals on a area of $50 \times 100'$). Now that larger areas are exposed, the

Holmes, R.
1960

Journal

9.

3 June Barrow, Alaska

animals are rarely seen out in the center of these patches, except where there is dense, usually cut, grass where the animals have some protection. Most of the animals seen now are along the edge of the snow & seldom venture out far from this area. Occasionally, individuals will be seen running across large areas of snow or tundra. After having watched the lemmings feed now for about week, I have come to the conclusion that they are primarily after the rhizomes & roots of the grasses. Very seldomly will they take a block of the grass. They will bunch over and work hard trying to pull a root out of the ground.

In the afternoon, the drum area was checked & very little lemming activity was found (but much lemming sign). The area is riddled with dog footprints, so they have reduced the population considerably in the area. A few shore birds are shown up here. Semi-pal were displaying and a hawk was seen.

Holmes, R.
1960

Journal

10.

3 June Barrow, Alaska

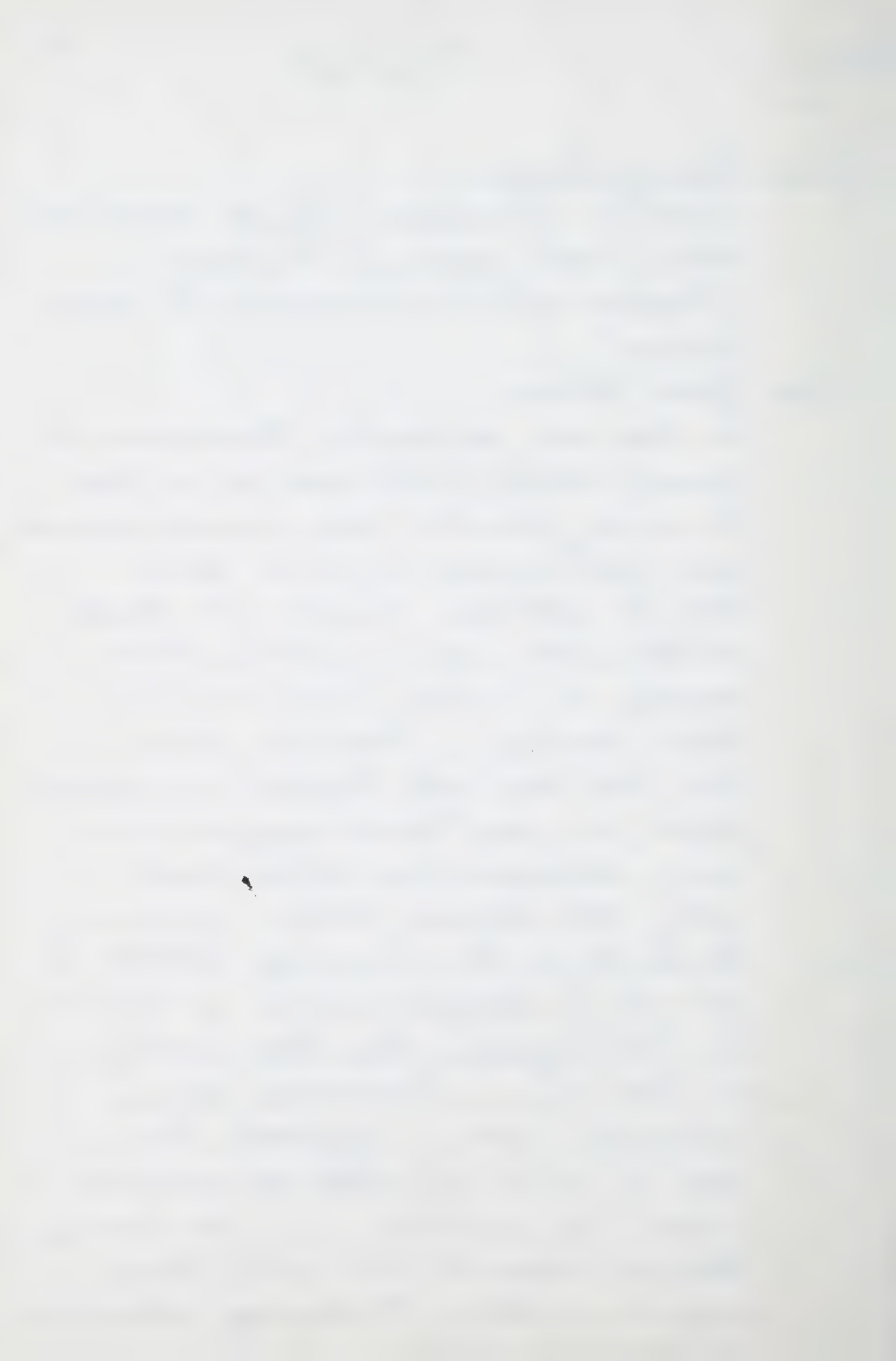
Later, The Elson Lagoon - Bobyik - Wohl - area was visited again & the various shorebird activities are recorded in the species account.

4 June Barrow, Alaska

The drum area was checked this morning for signs of activity. Little was seen or heard. The noise from the camp nearly drowns out any ^{real} displays in this area.

During the afternoon, I went with Mullin out to the beach ridge & he took his blood samples, etc, while I checked on the birds & lemmings. Birds were scarce in this area and only longspurs, an occasional jaeger, & a pair of Baird sandpeeps were seen. Lemmings were rather hard to catch and seemed rather scarce.

~~The~~ The area of the beach ridge between the two sets of beaver antennae is where the flock of gulls has been working, & in this area, lemmings seem extremely scarce. Apparently the group of 4 to 70 (re number) was enough to reduce the population. In the evening, Pitelka and I drove out to the north beach ridge to check on the lemming situation. Several animals were seen.



Holmes, R.
1960

Journal

11.

5 June Barrow → Inaru River → Barrow, Alaska

Maher, Henderson, and I left the village at 1100, heading south for The Inaru River. Jaeger and owl activity was seen all the way to the river. Several owl nests were located (4-7 eggs) (see Maher's notes). Jaegers (Pomarine) were counted during the trip southward, and large numbers were sitting on the ice along the shores of The Inaru. One Pomarine nest was located, which contained 1 egg. This was located about 25 yards from the shore of the river near the fish camp. Lemming sign was noticeable during the whole trip (except one area which seemed uncut). Near the river, the jaegers were settled & 1 owl nest was found, so apparently lemmings are present. The grass in this area shows signs of cutting, especially in the troughs. Shore birds were seen regularly. Pairs of redbacks were present during the entire trip. Small mixed flock of ♂ + ♀ Pectorals were noted. Large number of Phalaropes (Red) were seen. Most of these were ~ flocks, but occasional pairs were noticed.

Holmes, R.
1960

Journal

12

5 June Barrow → Inaru River → Barrow, Alaska

The trip back was made back in the evening in a rather hurried fashion. Little bird activity was noted. Makers notes contain a detailed account of the owls, jaegers, & lemming activity.

6 June Barrow, Alaska

Drove with Pitelka to Ikroavik via Footprint Lake and returned through central marsh. Flocks of longspurs were noted several times (4-7 birds). The owl nests were checked & 1 jaeger nest was found northwest of Ikroavik. The weather today was cold & windy & snowy.

7 June Barrow, Alaska

Morning spent collecting lemmings in central marsh; these animals were processed during the afternoon. A short trip was made to Wohlsehoy Slough in the late morning and again in the evening.

8 June Barrow, Alaska

Spent the morning working over specimens and checking out equipment. During the afternoon, Warner & I went to the west shore of Ikroavik where we

Holmes, R.
1960

Journal

13.

8 June Barrow, Alaska

walked the approximate length of the census plot. There are several pairs of longspurs, several redpolls + jaegers and little blue gulls. 1 Pectoral was also seen. The area is still fairly well covered with snow, but the ridge top is now becoming exposed a little more.

9 June Barrow, Alaska

The morning + afternoon were spent in the area along Elson Lagoon from the beach (N. end) to the area just south of Ootjigik Slough. The jaegers are now nesting + can be seen everywhere.

10 June Barrow, Alaska

Went to Footprint + Ikroavik Lakes to check on red-back activity. The morning was windy + overcast. The afternoon was spent in the lab work on immunities. During the evening, the wind died down, and the sun came out, so the area along Elson Lagoon was visited. Shorebird activities seemed to increase during this time. During the last week,

Holmes, R.
1960

Journal

24.

10 June Barrow, Alaska

melt-off seems to have slowed down. The cover now is approximately 70-80% snow. However, with the warm evening today, the melt-off should increase in rate.

11 June Barrow, Alaska

The weather has again turned cool, but the rate of increase of melt-off is noticeable. Several ponds of water are now seen - fresh lake + more of central marsh is exposed. The morning was spent walking along the beach ridge from the magnetic station to the gas line. Bird activity was low. Part of the afternoon was spent in the lab & the remainder on the beach ridge near the gas line.

12 June Barrow, Alaska

The morning was spent on the beach ridge collecting lemmings. An area 300' x 210' covered with 60% snow + 10% water yielded 130 animals. It was estimated that about 60% were removed, so the population was even higher. In the afternoon, I began setting out my study plot on the west shore of Ikroavuk and also the owl nests were checked. Lemmings

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12 June Barrow, Alaska

were processed in the evening. Today was a rather warm & windless day, and the amount of melt off was noticeable. The gulleys along salt lagoon had running water and many of the lagoons were softening to the point where they were quite mushy.

13 June Barrow, Alaska

The beach ridge was checked during the morning. I walked from the gas line to the magnetic station & back to AAC's. The bird activity seemed rather low. Only 1 or 2 Longspurs were seen & several sandpipers (see species accounts). In the afternoon, Voth & Britton's Areas were visited. Several Baird's & Red-bellied Sandpipers were seen, but again bird activity was low. A flock of Longspurs was seen (9 birds, 8♂, 1♀, 5♂ & 1♀ collected) between Voth & Britton's Area. The evening was spent processing specimens.

14 June Barrow, Alaska

Spent the morning setting up the plot on the west shore of Ikroavik. The late afternoon was passed by working on specimens.

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15 June Barrow, Alaska

The morning was spent on the beach ridge where little bird activity was noted. The afternoon was passed by processing specimens, and during the evening, I took a short trip to the beach & gas line ridges. More specimens were processed in the late evening.

16 June Barrow, Alaska

Walked the beach ridge and the area around ATCS during the morning. Baird's Sandpeeps seemed to be present in relatively large numbers (at least 6 ♂ were displaying at the same time). The melt off in this region has been slow during the past few days, but water is now about a foot deep in central marsh and is collecting in the troughs in various places.

The snow cover is approximately 40%. During the afternoon, Kenny Tuvak & I took the wangan down to Ikroavik and put it in place near the plat. Voth's creek, slough & marsh, & Footprint Lake are now under several feet of water and

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16 June Barrow, Alaska

are nearly impossible. The inlet going into Ikroavik is very slushy, and must be crossed out in the marsh. Evening to village.

17 June Barrow, Alaska

Worked on specimens in the morning, and then took Pitelka down to Ikroavik in the afternoon where we laid out part of the plot. The weather today was cold & windy. In the evening, Pitelka warmer, & I walked out into the drum area.

18 June Barrow, Alaska

Mommy spent near ABS where there was considerable bird activity despite the cold NW wind. I started my 1st shift on Maker's 24-hour jaeger watch at 1300 (to 1700). Also 2000-2400 spent on the beach ridge watching jaegers. The intervening hrs were spent in note writing & working on learning specimens.

19 June Barrow, Alaska

Early morning hours spent in jaeger watch on the beach ridge. The remainder of the day was used for recuperating from the 24-hour watch & in writing.

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19 June Barrow, Alaska
Field notes.

20 June Barrow, Alaska

I visited the beach ridge during the morning and took notes / The live plot + lemming activities. The afternoon involved preparing for a trip to Ikroavik + two traps were set out on the beach ridge. Melt off is still going on. During the past several days, it seems to have slowed down somewhat due to the colder weather, but today, it has warmed up sufficiently so that the snow should be gone soon.

21 June Barrow - Ikroavik, Alaska

Spent the morning packing for trip to Ikroavik. Finally at 1400, Chuck Larson + I left the bar and headed S. It was impossible to follow the gas line road, so we cut westerly around Voth's marsh + through Denali Gate. Today was warm + clear, so that the snow was melting rapidly. We arrived at the camp at 1600. During the evening, I walked along the

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21 June Barrow, Alaska - Ikroavik
North end of the plot. Golden
Plovers, and Red-bills seem
relatively numerous. Peewees
are also present. The area
looks promising. Most of the snow
is now gone from the area &
the polygon trough are now
filled with water + some ice.

22 June Ikroavik, Alaska

Began setting out plot at 0830. Maher
arrived at 1030 and helped during
the remainder of the day. By 1930,
most of the north 40 was laid out. During
the late evening, drums were placed
at the ends + half way point of the
plot. The lower end of the ridge was
checked + owl nest #9 was
found. A pair of white-rumped
Sandpipers was found near the
lower lake (south of 2nd inlet). The
weather during the past three
days has been warm +
sunny (a low of 35°F - high of 53°F
today). The majority of the snow is
gone, and the creeks are filling
rapidly. Even though this was an early
year, melt off has been delayed somewhat.

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23 June Ikroavik, Alaska

The plot was visited during the morning despite the westerly wind and light rain. At the time, the remainder of the stakes were put into place, and many of the end posts which had fallen because of the wind were propped up. In the afternoon, I ran the first census of the area. Unfortunately at this time there was very little muskrat activity - even though the wind had calmed down. By ^{late} evening, the wind had stopped, and the sun was present for short periods of time. After supper, I walked out the last 15 acres of the plot and placed stakes along the west side. If the pond distance is approximately correct, the 25 acre length will end at the south shore of the small lake. Also in this region the plot intersects certain low-center polygons which allow for a more marsh area to be included in the study area. The owl nest (#9) is located directly in the middle of the lower 60 acres.

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23 June Iktroavik, Alaska

In the late evening, I set out one of the sand-colored mist nets, but no lems were caught. I think there will work fine if I can get a low gully somewhere, so the net is not silhouetted.

24 June Iktroavik, Alaska

Insect sampling was attempted this morning. First, I collected a sample of sod from a fairly dry area near the wanigon. This piece measured $6 \times 6 \times 3$ and was mostly composed of grass, grass roots, moss, & peat-like material. Very little soil was included. Upon turning this apart, no insect-life could be found. A second sample was taken from a marshy area. This was of the same size as the 1st sample & but contained much more moss, & debris (cut grass, etc.). Here, again, no insects were found upon total dissection of the sample. It seems that the method of analysis is wrong. I intend to watch some lems closely for observing their actual

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24 June Ikroavik, Alaska

Feeding habits + then to sample - areas where the birds have actually fed. Perhaps, I have just chosen sterile locations (??).

During the afternoon, the plot was censused. In the evening I walked to the end of the entire plot (station 25) and laid out the line of stakes on the east side of the ridge.

About 1 hr. was spent in looking for the wh-rumped Sandpiper; it was heard once but was never seen.

Lemming activity still seems high even though the snow is now gone. Burrows have been dug into the polygons and especially into the mounds of moss. Whenever disturbed, the animals will dart into these tunnels. Occasional dead lemmings are found, but the majority of these have been killed by jaegers. Weasels have not been seen yet (except 1 by Childs + 1 by Maher along the beach ridge). The number of lemmings estimated before melt off / melt area seems to have decreased; this may be due greatly to the fact that

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24 June Ikroavik, Alaska

The animals tend to concentrate into the open patches, and therefore a census in these areas shows an extremely high number. It was noted that as the patch increases in size, fewer lemmings are seen. This would also suggest this idea. Occasional fight are now to be seen among the animals, but these usually involve no more than a short chase with a few loud cries or noises. As an estimate on the census plot, I believe there are about 25 animals / hay bale - or 50/acre. This is estimated on a count of animals in that area. The joey number remains high. There does not appear to be a shortage of food for these birds, since lemmings are often seen running around a a mouse where the joey is standing on or around a joey nest. The two ^{pairs of} ovals are still present along the west shore of Ikroavik. There are as of today no young in nest #9.

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25 June Ikersauk, Alaska

The morning was spent writing notes + checking a method of insect sampling. After watching several birds feed, I have attempted to obtain a sample of the peat from that particular area. Upon doing this, I am still unable to find insects in the sample. It was noted that the birds (e.g. Red-bellied) feed by moving along rapidly and only pecking once or twice in the same locality. One bird was timed. It moved 35 feet in 50 seconds and made 28 probes during the time. It seems probable that the insect fauna is more or less larger area than was supposed previously. In the afternoon, a census was conducted on the North 40. After supper, Carson + I came into camp. Fort Point lake is now drained, and salt lagoon has broken thru.

26 June Barrow, Alaska

The beach ridge + the area around AACS was visited + censused during the morning. In the afternoon, Jack

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26 June Barrow, Alaska

Reynolds and I went over to the shore of Elen Lagoon and Wohlsehlog Slough with the purpose of collecting sandpipers. The weather was miserable, it being rainy & windy. In the evening, Pitelka & I went over to Britton's & Voth's Area, and we picked up several birds. The snow is almost completely gone now; there is still ice on the Lagoon, and the shore ice is still in.

27 June Barrow, Alaska

Warner & I checked the traplines near AACS in the morning, & the remainder of the morning was spent in preparing specimens, etc. In the afternoon, I went to Central Marsh & to Dive Unit # 2, where I sat in the blind for about 2 hours. The day was sunny & warm; insects made their first appearance. The evening was spent along the beach ridge between the gas line & the beverage antennae and near AACS.

28 June Barrow - Wainwright - Barrow, Alaska

The morning was spent in anticipation of departure and in farewell with Dr. Robert Weeden, of the Alaska

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28 June Barrow - Wainwright - Barrow, Alaska

Department of Fish & Game (Research Biologist). Warner & I left for the flight at 1215 and arrived at the Wainwright Dewline Site (Liz 3) at 1300. During the flight owls (snowy) were seen regularly however not too commonly. At Wainwright, 6 owls could be seen from the site, and at least 2 of these 3 or were at a nest. Jaegers were seen frequently but again were not very common. A fox (Alopex?) was seen near the coast at Skull cliff. At Wainwright after talking to the site superintendent, we went to the field & laid out 4 traplines. One is located at the edge of an old lake bed where the tundra is quite marshy. The other three are on higher ground where they transect areas of high polygons, small pools & water, & tussock-like tundra. The bird fauna here seemed quite similar to Barrow. Red-tailed Pectorals, Semipalmated, & Bairds Sand. Pipers were not present. Golden Plovers, Longspurs, Snow Buntings, Skuas, Eiders, Pomarine Jaegers, Snowy Owls, etc. The jaegers were not dense and

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28 June Barrow - Wainwright - Barrow, Alaska

in an area of a little over $\frac{1}{2}$ square mile, there was not more than 4-5 pairs. During all our walking around in the area, the jaegers never came close to us as it went was near. Several territorial contacts were noted, however.

By supper, we had the 4 liners laid out, and afterwards, we put the traps in place. The plane arrived for me at 2000, and we left almost immediately. We arrived at Barrow at 2115 after $\frac{1}{2}$ hr. delay due to heavy fog.

29 June Barrow - Ikroavik, Alaska

In the morning, Pitelka, Reynolds and I went to owl nests 2 + 3 and weighed the young. Nest #3 was also banded in. In the afternoon, various duties were taken care of in preparation for the trip to the lake. In the evening, Pitelka gave his seminar, and soon afterwards Carson + I left for Ikroavik. Footprint Lake is now mostly drained. It was noted that throughout the lake basin there are huge masses of lemmings.

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29 June Barrow - Ikroavik, Alaska

pellets. The lake floor is covered by numerous wheel tracks & in the grooves & depressions made by these vehicle tracks, these droppings have accumulated. It is hard to estimate the density of these droppings since the number would be extremely high, but I believe a conservative estimate would be several thousand / sq. ft. The grass which was rather evident in the lake last year has been cut & most of the clippings have washed out when the lake drained. This leaves the floor ~~drained~~ without any cover (except in the areas of deep water). Lemmings are seen there commonly as they scurry back and forth. New grass is coming up in the drained portions of the lake. We arrived at the waniga at 2300 after checking owl nest #4. Later that evening I went out & checked an owl nest #10.

30 June Ikroavik, Alaska

From the census on the north 40 in the morning and early afternoon. The remainder of the day was spent

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30 June Iktroavik, Alaska

in improving the South-60. Barrels were placed at stakes 15, 20, + 25 on both sides of the plot, and the stakes inbetween were placed back into position. In the evening a heavy fog settled in, which lowered visibility to less than several hundred feet. White rump activity was observed near the south end of the pond during the turn. Also a strange + completely unknown bird (turn) was seen at the pond. It was a large goose which was standing at the pond edge with 2 old squaws. The bird was at least twice as large as the squaws with a long neck + a dark, goose-like bill. It was all brown with no specimen or tail markings that would be seen (it was also seen flying). It was pecked at by the squaws + later by two jaegers. When I returned 15 minutes later with a gun, the bird was gone. The only good possibility would be an immature white-fronted goose.

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30 June Ikroavik, Alaska

but this is not good because /
The mottled brown / The plumage +
The dark bill. It may have been
some straggler ?? - but who knows
now!! The sub at nest #9 were also weighed

1 July Ikroavik, Alaska

A census was conducted on the entire
100 acre plot. The weather was
clear with a light wind. In the even-
ing, I checked the areas north +
west of the hangar.

2 July Ikroavik, Alaska

The census was again run on the whole
plot. This took the entire day.

In the evening more information was
gathered on the white-rumps +
nest #9 was checked and the
young weighed. A shot trap was
made to live nest #1. The day
was sunny + somewhat warm. In
the evening a cold north-east wind
sprang up, + the fog settled in about
2200.

3 July Ikroavik, Alaska

Finished writing notes during the
morning and then drove with
Carson around Ikroavik and back

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3 July Iktavik, Alaska

Lakes. The weather today was overcast, cold, + windy. The trip around the lake was quite easy to make because most of the streams now are low enough to cross without too much difficulty. Bird activity was severely low.

4 July Iktavik → Barrow, Alaska

In the morning, I drove the low 60, but there was little happening. In the afternoon, we left for the camp + arrived at 1500. The afternoon was spent in catching up — the news + during the evening, Reynolds + I set out the traps in Central Marsh. Weather: overcast, light snow flurries.

5 July Barrow, Alaska

The morning spent in conference with Pitelka, Reynolds, + Warner. Pitelka left at 1130 and is due in Coliforme tomorrow. The traps were checked in the morning + evening. In the afternoon, I drove the beach road from the gasoline to Woblesley Slough. Bird activity was nil; very few were actually seen. Weather — cloudy with intermittent sun.

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6 July Barrow, Alaska

In the morning, the traps were checked & a census was made on the lemmings adjacent to the lines (a portion of this was done last evening). In the afternoon, a trip was made to Voth & Britton's Area, Voth's Slough, & the north end of Frobner Lake. Birds were again conspicuous about except for the ever present jaeger & 1 flock of Pectorals in the slough. This seems extremely early for this time of year in activity.

7 July Barrow, Alaska

This was the day of another jaeger watch & I was on duty from 0900 to 1300. After having lunch & seeing Brew, I worked all afternoon on the drum area trying to catch a snow bunting (with no success). In the evening traps were brooded in & I again was at the jaeger nest from 2100 to 0100.

8 July Barrow → Ikroavik, Alaska

The morning & early afternoon was spent in preparing specimens & preparing to journey to the wanigan. Maher & I left at 1500, stopped



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8 July Barrow - Ikroavik, Alaska

by the Shat-sared oval & Snowy Owl nests & arrived at the waning at 1730. In the evening after supper, I censused the north 40 & weighed the southernmost owl nest (49). Sunny-southeast wind.

9 July Ikroavik, Alaska

Today was a bright sunny day with little or no wind until in the evening. The mosquitoes & insects in general were out in full force, making field work difficult & unpleasant. The bird activity was extremely low during this hot period, and censusing was actually futile. A census was made in the morning & then a partial one in the evening. The nests were located again today & checked. No new hatchlings were found.

10 July Ikroavik, Alaska

The plot was censused in the morning & early afternoon. The remainder of the day was spent in taking pictures (35 mm + movies) and in checking eggs & nests. Today was another scorcher. The high was 71. - low was 53. There was - light

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10 July Iktroavik - Barrow, Alaska
easterly breeze which came up & kept the mosquitoes down. In the evening, Carson & Hussey decided to come into the lab & get a place for photographs of the lake, so I also came in, since things were quiet here.

11 July Barrow, Alaska
Caught up on lab work during the morning & checked the trap line near Voth's Area with Reynolds. In the afternoon, the nest were visited on the beach ridge & vicinity & photos were taken of the weasels. These weasels were first found by Muller, Warner & Reynolds on the beach^{side} by the channel on Pitelka's census plot. At this location, there is a large mound with numerous tunnels, etc. The weasels (Mustela vison) live in a den within the mound and can be seen easily by putting a lemming near the entrance. Upon doing this, they come out quickly & begin to pull the lemming towards their burrow. Movies & skulls were taken of these animals. The day again was stifling. The temp reached here at the lab was 82.

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11 July Barrow, Alaska

however, officially it was only 79°F. The day was clear & the mosquitoes, etc. were out in full force. There was no wind.

12 July Barrow, Alaska

The morning was spent in the lab, catching up on paper work. In the afternoon, I took things to Ikroavik for a dyeing experiment, while Carson photographed from the air. My plot was also photographed. In the evening, traplines 4A + 4B were put out by Warner, Reynolds & myself. The day was generally overcast with only a light breeze. Insects were also quite common today.

13 July Barrow, Alaska

In the morning, the traplines were checked near Voth's slough & specimens were prepared. In the afternoon, Maher & I went to the oval nests in Central Marsh & oolipik slough. The owls seem to be becoming more aggressive (at least at nest #2). Two Brant nests were located; one within 35 feet of oval nest #6. Flocks of Pectoral Sandpipers are now seen in the marsh, but other sdps. are relatively scarce & are not being seen.

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Journal

34.

13 July Barrow, Alaska

In the evening, several pectorals were collected in central marsh & there were worked on during the evening. The area south of Wohlsehlog slough seems to be good red-boat habitat & is in an area which is little disturbed. This would be ideal for a census plot.

14 July Barrow → Ikroavik, Alaska

Drove to the lake via the trapline near Voth's Marsh. Very little bird activity seen, except the jaegers. My plot was checked & a brief census taken on the S. 60. The nests were also checked. In the afternoon & evening, specimens were prepared.

15 July Barrow, Alaska

Traps checked & lot work completed in the morning. A census conducted in the afternoon near the lake (see Warner for results). In the evening the traps were brought in. Today was windy (20-30 mph) and it rained during most of the afternoon.

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16 July Barrow, Alaska

The morning spent working on notes + specimens. In the afternoon, Pieper, Willen, Warner and I went out to the fertility plot (directly south of the B.R. between Wobleschlag + Oolusik Sloughs) and set out the 2 new traplines + the traps. In the evening, Mark and I weighed the owls at nests 2 and 3. The weather today was cold + windy.

17 July Barrow, Alaska

The morning was spent by checking the traps + going to the mouth of Oolusik Slough + around. In the afternoon, I went south through the country east of the gas line and then over to Ikroavik where I made a quick census of the plot. The weather today was warm + sunny. In the evening, I photographed the owl at the blind new nest #12.

18 July Barrow, Alaska

Checked traps again + drove around in the area between Wobleschlag + Oolusik Slough. There was

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18 July Barrow, Alaska

little bird activity. During the afternoon, I stayed + worked in the lot despite the sunny weather today.

19 July Barrow, Alaska

Put up specimens all morning + then in the afternoon went to Voth's Area, Denali Gabs + Village Slough. The weather was cold + windy. In the evening, Warner and I picked up the traps from the fertilizer plots. Our take on these birds was fair (34 animals / 3 days / 2 lines).

20 July Barrow, Alaska

Major foggy water started at 0800. I was on duty from 0800 to 1200. In the afternoon, I worked on specimens and finished them up in the evening.

21 July Barrow \Rightarrow Ikroavik, Alaska

Left the lab at 0800 and arrived at the lake at 0930 (via Voth area + marsh). After taking a census, I walked the owls + drove around looking for sandpipers. Arrived back at the lot at 1600. Worked on specimens.

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39.

21 July Barrow = Ikravik, Alaska

The lack of water this year seems terribly important. The tundra is still relatively dry & on the ridge tops where it is especially dry. The vegetation is taking longer to recover. The primary^{gr} vegetation on these ridges is the willow with occasional patches of Petasites. The weather for the past 2½ weeks has been warm & generally sunny. For three days there was cool weather with light rain but it had little effect. The slough draining into Salt Lagoon is dry (through Vot's Area) & many of the puddles & shallow ponds here now dried up.

22 July Barrow, Alaska

During the morning specimens were prepared and notes written. In the afternoon, a short trip was made to Central Marsh & the beach ridge to check on nests. Weather warm & sunny with fog in the late afternoon and evening. In the evening, more specimens were prepared.

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23 July Barrow = Meade River, Alaska

Started another jaeger watch in the morning (8 to 12). In the afternoon, Warner, Dougdale (Limnologist - U. of Pittsburgh) & I flew to the Meade River Coal Mine, 70 mi S. of Barrow. The tundra at M.R. was extremely different from that at Barrow. This consisted of tussock-type tundra with many grasses & flowering herbs. Eriophorum was in full bloom and covered the slopes of the rolling hills. The bird life there was quite poor, and most of the breeding birds had apparently departed. One ♀ Pectoral Sandpiper with flying young, 1 ♀ Ptarmigan (Willow wet - large brood (9)) and 1 Sh-e. Owl with 6 chicks in a nest were found. Longspurs were common, and a few snow buntings were seen. A herd of approximately 200 Caribou was seen about 2 miles west of the village (M.R.). We arrived back at Barrow at 1930 after 2 1/2 hours on the ground at the mine. At 2000, I went back on the jaeger watch & was relieved at 2400.

Holmes, R.
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Journal

41.

24 July Barrow, Alaska

Specimens prepared in the morning.
In the afternoon, Jim Hume, George
Kenton, Maher, and I left here
at 1300 for a trip to Hoodman's Island,
one of the Plover Islands. In Elson
Lagoon, a few small flocks of
Old Squaws were seen, and several
molting King Eiders were present.
One ^{3-4 yr} brood of King Eiders was noted
NE of Hoodman's Island. Flocks of
2nd & 3rd year Glaucous Gulls were
present around the islands along
with the nesting Sooty Gulls
& Arctic Terns. The islands
themselves are low flat
gravel islands, with only an
occasional block of grass
growing among the driftwood.
We first landed on Doctor's
Island, the one closest to Eliot's
Pass. There was only 1 Arctic
Tern here which dove at us,
or if she had a nest or young.
None were found. On Hoodman's
Island, there were numerous
terns (3-400) around the island &
flying over on broken screaming

Holmes, R.
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24 July Barrow, Alaska

as we walked along the island. Only 2 or 3 nests were found with eggs, and about 16 chicks were seen (12 banded). The nests are simply a depression in the sand, usually among the driftwood where they are somewhat protected. The eggs are light greenish with dark black blotches + spots.

The Sabine Gulls were most common feeding along the shores. A few however were breeding, since about 3 nests were found. These nests consisted of a few small pieces of sticks or grass placed into a cup in the sand among the driftwood. One nest was found with 1 egg, another had 2, & a third had 1 egg cracked open with a clean egg - well-developed embryo and a dead young about a foot away. No live chicks were seen of the Sabine's Gull. Some of the gulls were molting (particularly on the head), but others were still in the breeding plumage. The way of the gull with a nest is a harsh, shrill note.

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24 July Barrow, Alaska

call, which is much harsher than the call of the tern.

25 July Barrow, Alaska.

Worked on notes and specimens during the morning. In the afternoon, I drove to Voth's Area, and Marsh + to Renali Ridge (where the transmission went out on 492). Walked back to the gas well road where I was picked up by Andy Crane + brought back into the base. I then returned in another vessel + retrieved my equipment. In the evening, I prepared specimens.

26 July Barrow = Ikroavik, Alaska

The morning spent in preparing specimens and writing notes. In the afternoon, Reynolds and I went to the south end of Loon Lake via the east shore of Ikroavik, and then around the south end of the lake, up to the plot and the wanigar and then back to Barrow. The weather was

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Journal

44.

26 July Barrow = Ikroavik, Alaska

Overcast and windy (15-20 mph, NE).

27 July Barrow, Alaska

During the morning, I worked on notes and specimens. In the afternoon, Maher and I went to the far owl nest near Soksik Slough and banded the young. The nests along the way were also checked. Specimens were prepared in the evening.

28 July Barrow, Alaska

The morning was occupied by preparing skins + writing notes. In the afternoon, I drove to Voth + Britton's Areas and then south to the north end of Footprint Lake. Shorebirds are now seen only in the wet-low-vegetation polygon areas, and the high-plateau are relatively bare (except possibly for the Golden Plover). The localities in particular are the muddy areas where the birds are often seen feeding. The weather today was windy & cloudy - with some sun in the afternoon.

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45.

29 July Barrow, Alaska

Specimens were prepared in the morning. In the afternoon, the beach ridge, central mound + the one east of the Beach ridge were checked. There was very little activity except east of the ridge where several birds were located in the muddy - semi dry ponds. The weather was clear - but windy. The ice is still along the shore, but a lead can now be seen beyond the first pressure ridge.

30 July Barrow, Alaska

In the morning, lab work was completed. In the afternoon, I drove to Ooth's Area + vicinity, where I collected a few birds. The weather today was cold + rainy + snowy - the first such day all summer. In the evening, specimens were prepared.

31 July Barrow, Alaska


Maheer, Dr + Mrs. Hume and I left the base at 1030 headed for the Pass. From there, we took The Hume's boat and went directly east to Tapkaluk Island. We passed Queter's

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46.

31 July Barrow, Alaska

Island which has a shape like  and is about $\frac{1}{4}$ mile in length. This island was not landed on this time, but it was visited on the 24th. There were very few birds there at that time (The island was quite low & flat with very little driftwood). Godman's Island is the next in the series, and this one is about a mile long. It has higher places where there are scattered pieces of driftwood & birds are found nesting here. When Tapkaluk was visited today, it turned out to be a very low sandy island with very little nesting local for birds & consequently there were no birds nesting there. A few terns & Sabine gulls were seen there, but there were apparently wanderers. The island is hard to land on because of several shoals & shallow water on the south side of the island. Looking down the islands to the east, another one of the Tapkaluk Island appears to be higher, but this one was not visited.

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47.

1 August Barrow, Alaska

The weather this morning is rather cold & rainy. Specimens were put up & notes were written. In the afternoon, preparations were made for obtaining a weasel which is pregnant. More notes were also written.

2 August Barrow, Alaska

Went to the Beach Ridge & Central Marsh during the morning & visited Area & Footprint Lake in the afternoon. Weather overcast, but there was no wind. The fog settled in during the late afternoon. The number of shore birds seen - the tundra is now very low. Today, however, for the first time, numerous shorebirds were present on Footprint Lake. Pectoral Sandpipers were the most abundant along with small numbers of Semi-palmated Sandpipers & Turnstones. All birds were concentrated around the wet, marshy area in the center of the No. 1 part of the lake.

Holmes, R.
1960

Journal

18.

3 August Barrow = So Barrow 3, Alaska

Maker, Reynolds, and I left Barrow at 0900 and headed south via the gas well road to Footprint Lake - around the gas well into the dry lake - then S + SE along the marsh E of Low Lake, and then SW to So. Barrow 3 (about 16 miles distance). On the return trip, we headed east from S.B. 3 and the cut NE + N. to Hunter Lake and then west to the gas well + N. to the base along the east side of the gorge line. The main objective of the trip was to locate new owl nests + band the young. 9 new nests were found and 34 chicks were banded (see owl notes). Information was gathered on all birds seen. Shorebirds were relatively uncommon - only a few being seen during the entire trip. The habitats traversed were varied including both ridge + wet marshes + transitional zones, but steel

Holmes, R.
1960

Journal

49.

3 August Barrow = So. Barrow 3, Alaska

The most numerous ^(shore) birds were in Footprint Lake. The weather was overcast, but there was no wind. We arrived back at the base at 1800.

4 August Barrow, Alaska

Specimens were prepared in the morning + evening. During the afternoon, notes were written.

5 August Barrow, Alaska

Weather today was miserable. A cold SE wind was blowing and this coupled with light rain made this a very uncomfortable day outside. Lab work was continued and is now nearly caught up.

6 August Barrow = Ikroavik, Alaska

I left the lab at 0830 + drove directly to the lake where I spent the rest of the day. The plot was "censused" - and only 1 RB was seen on the plot (that is - the only shorebird present was the 1 RB). This area is now getting quite green: as there is little dry grass to hide the new growth. I returned via Footprint Lake.

Holmes, R.
1960

Journal

30.

6 August Barrow = Iktroavik, Alaska

when the shorebirds have now started to concentrate.

7 August Barrow, Alaska

Lot work was worked on in the morning & afternoon. John Hobbie & his wife arrived yesterday & today, we had a good talk here in the lab. In the evening, two sets of traps were put out near AACS. The day was foggy & overcast.

8 August Barrow, Alaska

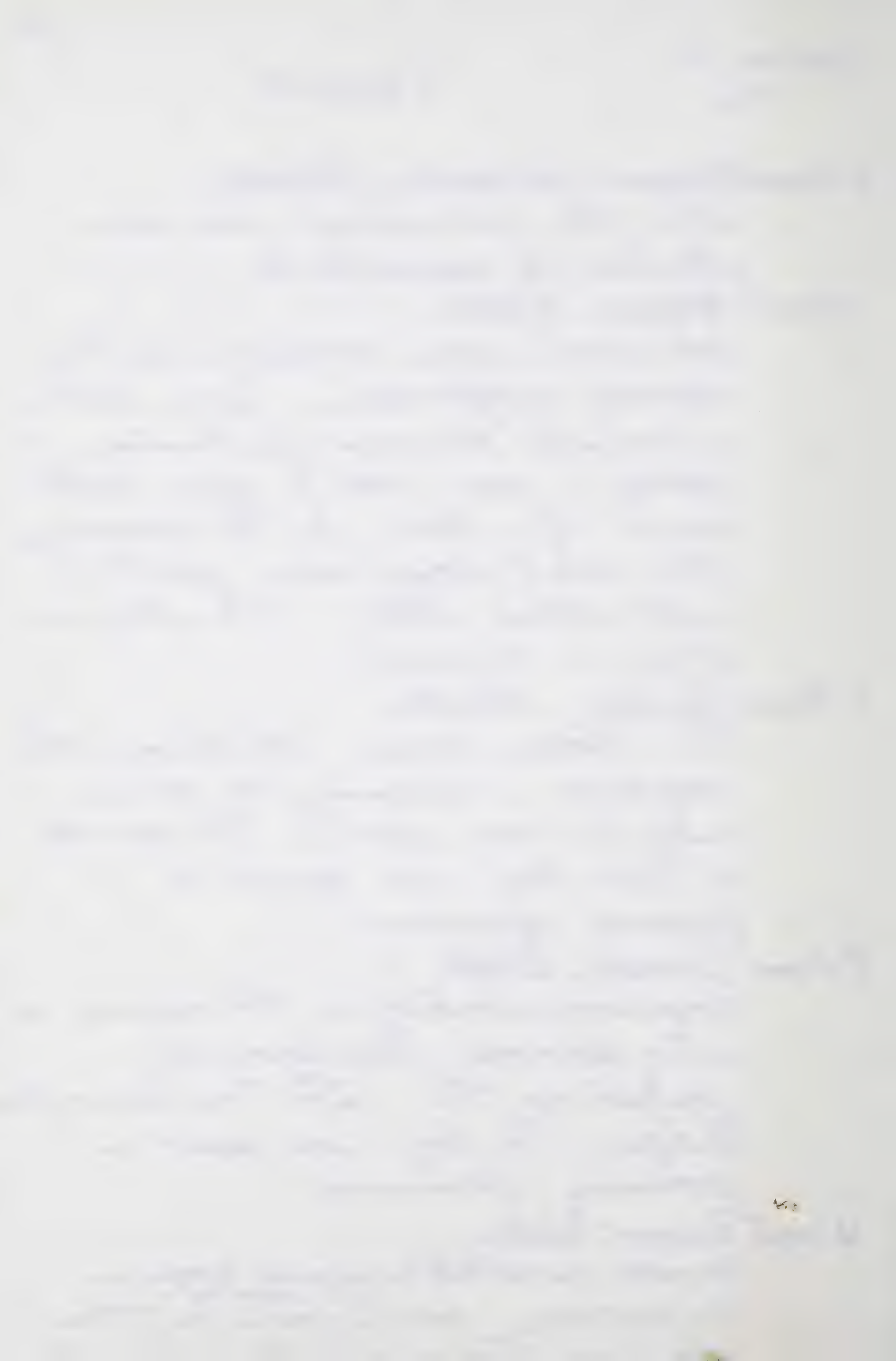
The traps were checked in the morning & evening (on gasline ridge & near AACS). The remainder of the day was spent in preparing specimens.

9 August Barrow, Alaska

Traps were checked in the morning & in the evening. Reynolds & I picked up the ^{lines} 2nd in the Bear (Goshy) Ridge. The day was spent in processing lemmings.

10 August Barrow, Alaska

Reynolds and Ward checked traps in the morning and ^{R. & I checked them} again in the evening. Today was the second



Holmes, R.
1960

Journal

51.

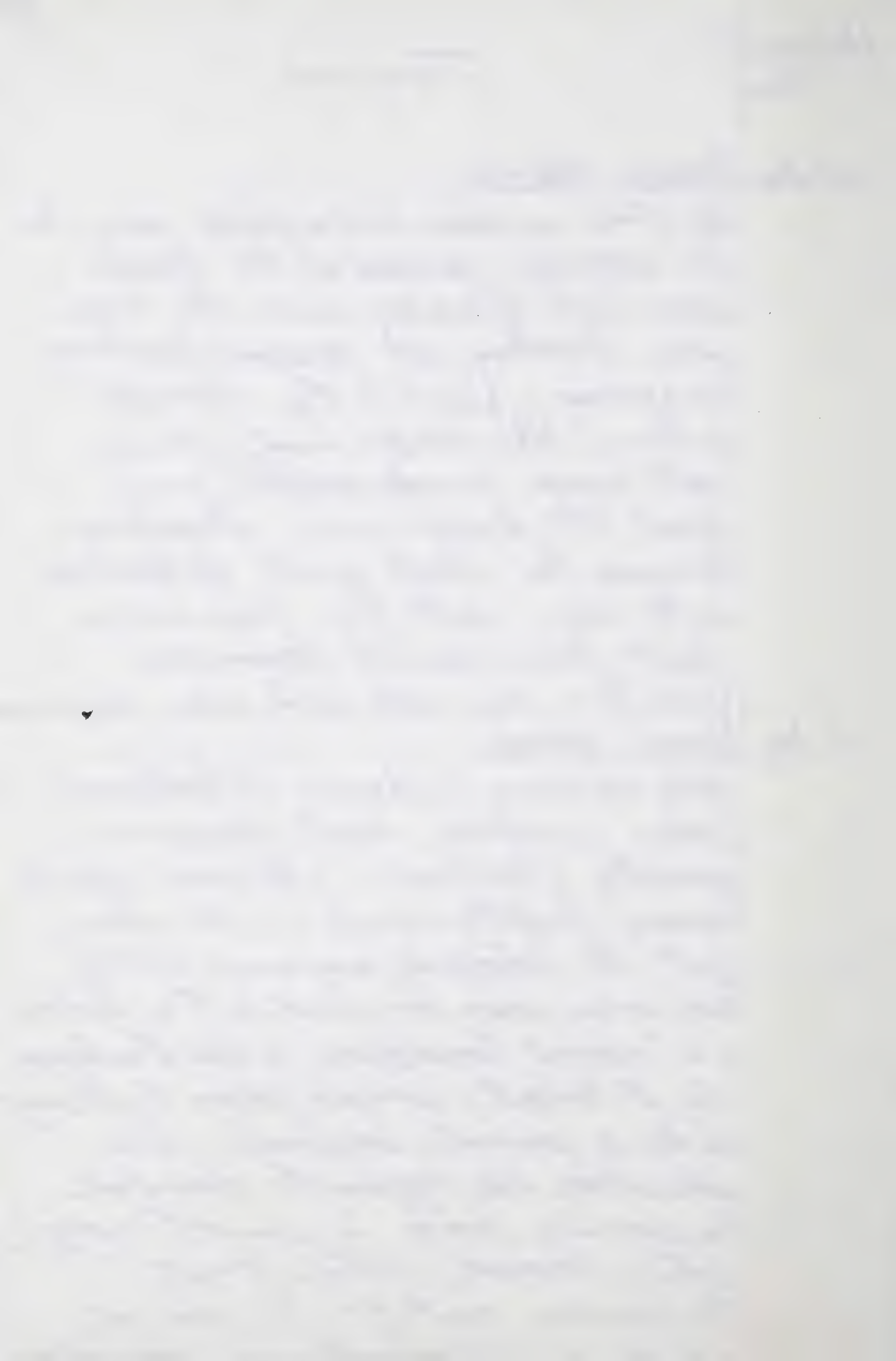
10 Aug Barrow, Alaska

day that we have had a steady rain. In the morning, several of the troughs were full of water and the traps were floating at several locations. By evening, most of the troughs where the traps had been set were underwater and most of the traps were floating. This was the last night of checking for the line, but the traps were left there until tomorrow.

During the day, lab work was completed.

11 Aug Barrow, Alaska

This morning I drove to Footprint Lake - which had become greatly flooded. (It was still raining lightly early in the day, but it stopped around 1800). There were very few birds in the lake (2 Pectoral Sandpipers, 6 Red Phalaropes, 12 ♂ Pintail, several jaegers @ shore, chicks & several mergansers). The shorebirds had apparently deserted. On coming back, I went through VAD's marsh, VAD's Area & the tundra north of it, and a group of 8 Pectorals were seen along



Holmes, R.
1960

Journal

11 Aug. Barrow, Alaska

with a few Phalaropes. The tundra was extremely wet today. All the troughs and dried pools were again filled, & the tundra had the appearance it had at melt off time. During the afternoon, the clouds lifted and the rain ceased. Reynolds & I went out & picked up the traps run AHS and put them out again on the Bear Ridge when we also restaked the lines.

12 Aug Barrow, Alaska

The traps were checked in the morning & again in the evening. Central Marsh vicinity were checked for birds during the afternoon. Here there were flocks of Pectorals (all juveniles), phalaropes, and several western Sandpipers. Long-billed Dowitchers are now fairly common in the marsh & large flocks are seen frequently.

13 Aug Barrow, Alaska

The last of Maher's fogger watches was conducted today in Central Marsh. I was on at 0900 to 1300 and 2000 to 0100. In the afternoon

Holmes, R.
1960

Journal

53

13 Aug Barrow, Alaska

specimens were prepared.

14 Aug Barrow, Alaska

Traps were checked on the Beach Ridge in the morning, and in the evening they were picked up. The remainder of the day was spent in doing odd jobs. One skin was put up. Dr. Thomas (Ohio State Univ. Mus. of Nat. Hist), Dr. Wolfe (AEC) and another gentleman visited the lab during the afternoon.

The tundra has become drained during the past three days; however, there are still very many puddles & pools present and the marsh is still quite wet. The weather today has been quite cold (it froze last night).

15 Aug Barrow, Alaska

Drove to Ikroavik in the morning, weighed the ovals at Nest #10, and did some work on the plot (stakes were counted out & plowed along the west edge of the plot). Afterwards, I met Regvolder north of Voth's Ave, and we plowed out traps in III A+B. The weather today was cold and windy (NE-20 mph). There was little bird activity.

Holmes, R.
1960

Journal

34.

16 Aug Barrow = Cape Lisburne, Alaska

After checking the traps the morning, Maher and I flew west to the vicinity of Cape Lisburne where we landed on Ipswich Lake. The lake was about a mile in diameter with a small island in the center of it. The island was 207' long \perp 121 feet wide. It was fairly flat across the top - which was 6-8 feet above the surface of the lake. It was rimmed with sea foot of gravel beach and then a steep slope up to the plateau. The top of the island is covered with grass - most of which is matted down. Gull nesting spots were quite easy to find, since there were definite depressions every 10-15 feet. Many of these were old & have not been used previously for many years. A total of 78 were found on the top, and 47 around the side - making a total of 125 nest cups. A conservative count was made of those which appeared to have been used this year. The number here were 28 on

Holmes, R.
1960

Journal

16 Aug Barrow = Cape Lisbourne, Alaska

The top and 45 on the sides. The total of 45 nests may still be too high. As we were approaching the lake ^{is lower} there were an estimated 130 Adults + 50 juveniles. All juveniles flew when we approached, & then the birds scattered over the lake. Three paper bags were filled with pieces of bone, feathers, & other matter which may enable us to get some idea of the effect of the gull as a tandem predator. Several of the nests were filled with sticks & straw and were therefore built up several inches from the ground. These may have actually been the active ones this year. We left the lake at 1730 & arrived at Barrow at 2056. The weather today was cold (-32°) and windy (gusts to 40 mph - NE-N). On the trip back toward the base, a golden eagle was seen near Liz 2, and several family groups of Swans were noted SW of Liz B. Groups of Sabine gulls were noted along the coast & 2 Horned Puffins ^{1 cormorant (sp?)} were seen about a mile off shore near Liz A.

Holmes, R.
1960

Journal

17 Aug Barrow, Alaska

Checked the traps in the morning & then worked a note & lab work during the remainder of the morning & afternoon. Traps were checked again in the evening & line III A + B were restaked.

18 Aug Barrow, Alaska

The traps were checked first thing in the morning, and then Mike & I left with Ed Hopson for the village & a walrus hunt. We departed from the village at 1100 on the Hopson's boat. The boat was about 30' long and had a small cabin on the bow $\frac{1}{2}$. The boat which housed the motor (a weasel motor complete with transmission, radiator, etc.). A hole was made in the roof to allow the person steering to see. The front part of the ship was covered by a tarp which was rolled back when walrus were sighted. On going out, it was nearly 2-3 miles before we came to the first ice. Here we saw 2 whales, one which I am sure was a Gray whale. The other was not identified. Between the point & the lower

Holmes, R.
1960

Journal

57.

18 Aug Barrow, Alaska

we had seen many Arctic Terns (Ads + Juvs.), Sabine Gulls (Ads + Juvs.), & several Glaucous Gulls. After entering among the ice, we stopped for water at one of the large cakes of ice. This was obtained from a pool in the flow. The ice throughout the day was present in small pieces (100' in diameter) with occasional larger masses, & many small pieces. After about heading out for a hour (5 miles?) - we sighted a herd of 5-6 walrus lying on a small ice flow. We headed around them so to come upwind & then came within 30 yards of the animals. Once we were within range all 9-10 men opened fire with their shoddy rifles & the walrus began to dive into the water.

One was killed instantly, & he remained on the ice. The others were in the water, many of them wounded. One was chased for about 15 minutes but it finally sunk out of sight & was thereby lost. After this

Holmes, R.
1960

Journal

18 Aug Barrow, Alaska

we landed where the 1 animal had been killed & the eskimoes proceeded to butcher the animal. First the head was cut off, then the skin & flubber on the sides, the feet & hind limbs, & finally the rib cage. This all took about 15 minutes. The meat was loaded on board in the middle of the boat - so that when we resumed moving, we all had to stand on top of the mass. About 45 minutes later, another group of 4 or 5 was spotted. Upon our approach they turned & slid into the water. One, however, was slowed down by numerous shots & was almost dead when he slipped off the ice. It apparently sank immediately, for it was not seen again. Two of the other were chased & both were killed & then harpooned. After dragging them to the ice and after hooking ropes around their heads, everyone pulled & then came out onto the ice. The eskimoes then proceeded to cut them up again.

Holmes, R.
1960

Journal

59

18 Aug Barrow, Alaska

During the remainder of the day we cruised among the ice flows and did not see any more walrus. Several bearded seals (*Erignathus barbatus*) were seen + shot at. One was killed + sunk. Two or three Ringed seals - *P. hispida* were also seen + one was shot + taken on board. We arrived back at the base at 2030.

The crew of the boat were relatively young; there were 2 older men, however. The method of shooting used by these people seemed to be rather wasteful. The idea of shooting into a herd seems to lead to a condition where there are lots of injured walrus + very few dead ones. At the time of shooting, everyone seems to be so excited that no one has control + thus man-wild shooting takes place. Many of the animals are injured - at least internally + many will probably die soon or later.

On the way in about a mile from shore, another Grey whale was seen.

Holmes, R.
1960

Journal

68.

19 Aug Barrow, Alaska

The morning was spent processing lemmings & writing Notes. In the afternoon, Warr & I restaked trapline IV A+B and then moved the traps from III AB to these lines.

20 Aug Barrow, Alaska

Checked traps & processed specimens in the morning & went with Mah to Central Marsh for mapping in the afternoon. The traps in odd's line were checked in the evening. The weather during the past 2 days has been overcast & cool.

21 Aug Barrow = Ikroavik, Alaska

In the morning, I checked the traps & processed specimens. In the afternoon, I drove to the lake where I restaked the lower end of the plot & caught the ovals. Then after checking some temperatures for Cassa, I returned via Dry Lake & Footprint Lake. These lake beds are not well populated with lemmings this year. The south end of Footprint seems to be too full of water - which

Holmes, R.
1960

~~Catalog~~
Journal

61.

21 Aug Barrow, Alaska

covers up the frozen mud flats. Very few birds have been seen this year. Dry lake has one or two ponds which are pretty good. The mud is exposed around the sides & a small flock of Red-tails were feeding there. The tundra itself has very little shorebird life now. Occasionally a pectoral or phalarope will be seen in the wet places but only seldomly. The water is still present in the troughs & most of the ponds are still full. The weather today has been cold (23° this morning - 32° during the day).

22 Aug Barrow, Alaska

Checked traps & wrote notes in the morning & processed birds & lemmings in the afternoon. In the evening the traps were checked. This morning the ground was covered with $\frac{1}{4}$ " of snow, & the temperature was around 30° . Snow continued through the morning but quit by afternoon.

Holmes, R.
1960

Journal

62

23 Aug Barrow, Alaska

Worked on specimens in the morning & processed lemmings. In the afternoon, Reynolds and I picked up the traps from Voth's Area (line IV A+B). Then we restaked lines I+II and VII+VIII. The traps were placed out on "r" in Central Marsh.

24 Aug Barrow, Alaska

Checked the traps in the morning & went to the airport to meet Petelka. After lunch, we discussed the various happenings / the summer & then in the evening, the traps were checked again.

25 Aug Barrow, Alaska

Checked traps in the morning & then helped Maher map more of his jaeger nests on the beach ridge & vicinity. In the afternoon, the surveying work was finished & specimens were put up. In the evening, traps were checked & specimens were processed.

26 Aug Barrow, Alaska

Checked traps in Central Marsh in the morning & then processed specimens. In the afternoon, pots were worked

Holmes, R.
1968

Journal

26 Aug Barrow, Alaska

4 more specimens were processed. In the evening ~~more~~ traps were brought in & more specimens processed. During the last three days we have had a hard Easterly wind blowing which has not let up for any length of time. The wind has been accompanied by a layer of dark clouds & for a while this afternoon, it rained.

27 Aug Barrow, Alaska

Flew to Pitt Point with Zimmerman & returned. Total trip took 2 hours with only a very few minutes on the ground. Jaegers & owls were both seen quite common as far east as Admiralty Bay. A few jaegers were seen south of Cape Simpson & a few at Pitt Point. On, 1 or 2 owls were seen east of Admiralty Bay. At Pitt Point, Glaucous Gulls were fairly common & numerous. Ads were seen all around the tundra (note - the purpose of our trip was to take extra traps to Reynolds. Some his traps were being heavily preyed upon by beavers).

Holmes, R.
1960

Journal

27 Aug Barrow, Alaska

In the afternoon, Pitelka & I worked ~ specimens. In the evening, skins were prepared.

28 Aug Barrow, Alaska

Trogs were put out in the fertility plots this morning & the area between these plots & the base was checked for shorebirds. The weather today was cold & windy. The ponds were still mostly frozen at 1600. In the afternoon, Warner & I mapped his live plots. In the evening, specimens were worked (lemmings).

29 Aug Barrow, Alaska

Pitelka and I checked the traps in the morning (in the fertility plots) and looked for shorebirds along the way. Very few were seen (except for a few Pectorals). The weather again today was cold & windy (NE). The ponds & ground were still frozen at 11 am - making feeding difficult for most of the birds. The day was overcast with light snow in the early morning hours. Specimens were

Holmes, R.
1960

Journal

29 Aug Barrow, Alaska

processed during the remainder of the day

30 Aug Barrow, Alaska

The traps + central marsh were again checked during the morning, and lemmings were processed during the afternoon + evening. All of the ponds were again frozen this morning, but the day was generally warmer - due to less wind.

31 Aug Barrow, Alaska

I picked up the traps from the fertility plots today. Lemmings were processed in the afternoon + evening. Reynolds returned from Pt. Barrow in the late afternoon. This morning it snowed until almost noon, leaving $\frac{1}{2}$ " to 1" on the ground. Much of it was gone by evening.

1 Sept. Barrow, Alaska

The entire day was spent in processing lemmings. The weather was sleety + cold. Warner left via Wien airline for Los Angeles + California.

Holmes R.
1960

Journal

66.

2 Sept Barrow, Alaska

Processed lemmings during the morning & early afternoon. Late in the afternoon, I drove to the beach ridge & central marsh to check the funds. The snow has persisted in many places, but it is existing in small patches 4-6" in diameter. I estimate that 60-65% of the ground was actually covered. There are drifts being polygons and in crevices. Lemming activity can be seen in the snow, & where snow has drifted across holes there have been depressions by the animals. Therefore, parts of the funds which are being used by lemmings are easily seen. Runways were seen patchy, & occasional diggings were seen. The ponds were for the most part frozen, some up to 1" in thickness. Bird activity was low with only a few jaegers, 1 snowy owl, 2 Pectorals, & 1 Redpoll being seen. Weather overcast & snow light - Temp at 1800 - 27°F.

Holmes, R.
1960

Journal

67.

3 Sept Barrow, Alaska

In the morning, Pitelka, Reynolds and I went out to AAC's and to the beach ridge to discuss the winter research program. In the afternoon, I drove to Ikroavik, checked the plot & then came back to the base. The last Murrelets were processed in the evening. The weather today was overcast & snowy. Theundra ponds were all frozen over & even Family slough was frozen. Much snow remained on the tundra.

4 Sept. Barrow, Alaska

Finished up the P. hutchinsoni specimens in the morning (Specimen No. 4021). In the afternoon, Waller, Pitzer, Reynolds, Pitelka & I went to Voth's Area for a look around. We packed in the evening. Weather overcast & slightly windy today. Two Redpolls seen.

Census plot - 1960

Holmes, R.

1960 4-0

1.

23 June

Ikroank Plot

-1300-1630.

PT Nest



PS
PS

P.S.
displaying

GP. x
feeding

GP. x

RB

RP
P_x

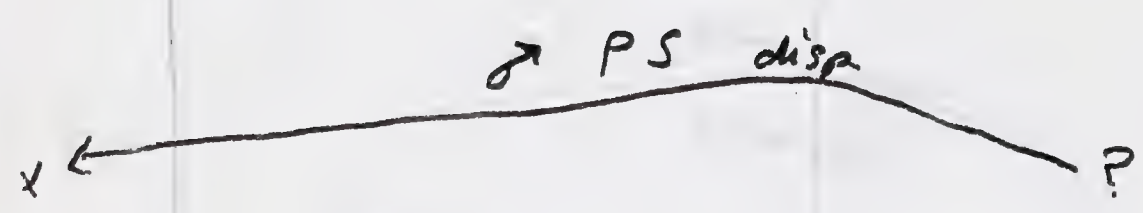
CP_x

3 RP → x x x
28, 10

RP-19
x

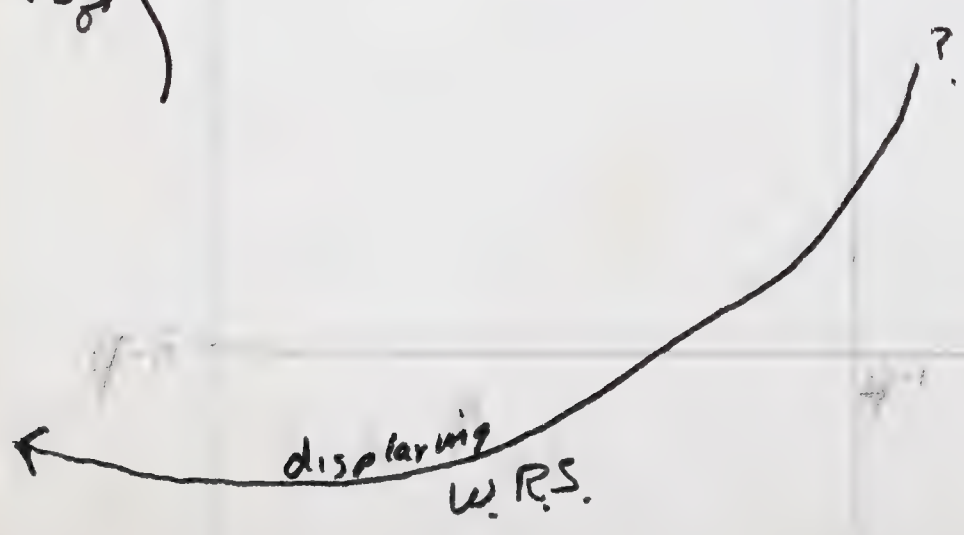
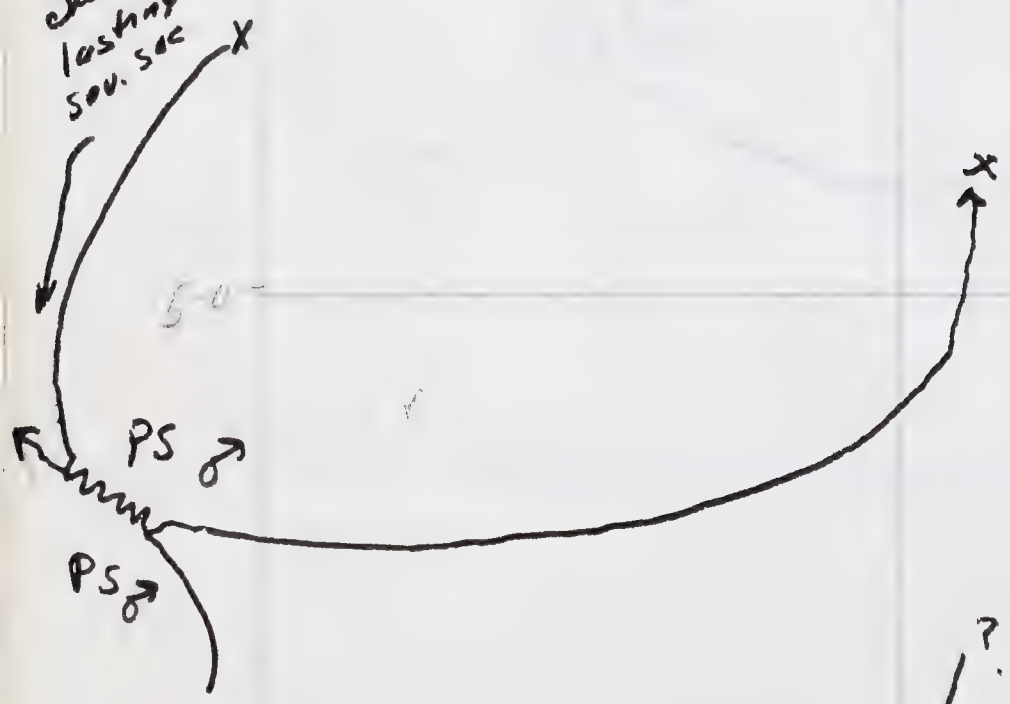
mel. p J
P J

P J
next ?



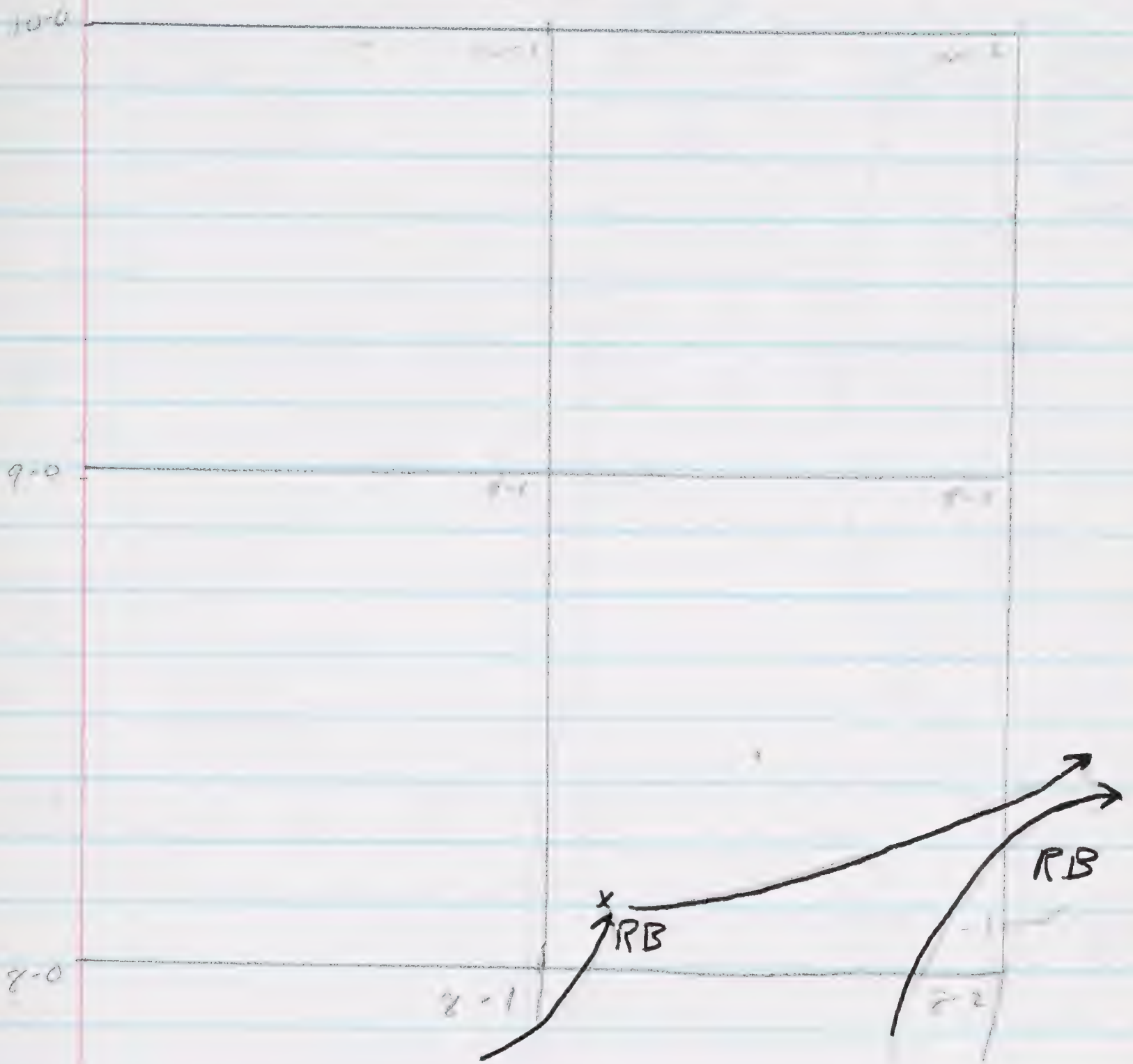
PS
x

chase
lasting
sou. soc



Holmes, R.
1960
23 June

2.



Holmes, R.
1960

23 June

3.

Sabine
Creek

flock of
6 ♂ PS
1 appears
to be
chasing
the
rest

4-2

3-2

2-2

1-2

2-4

2-4

1-4

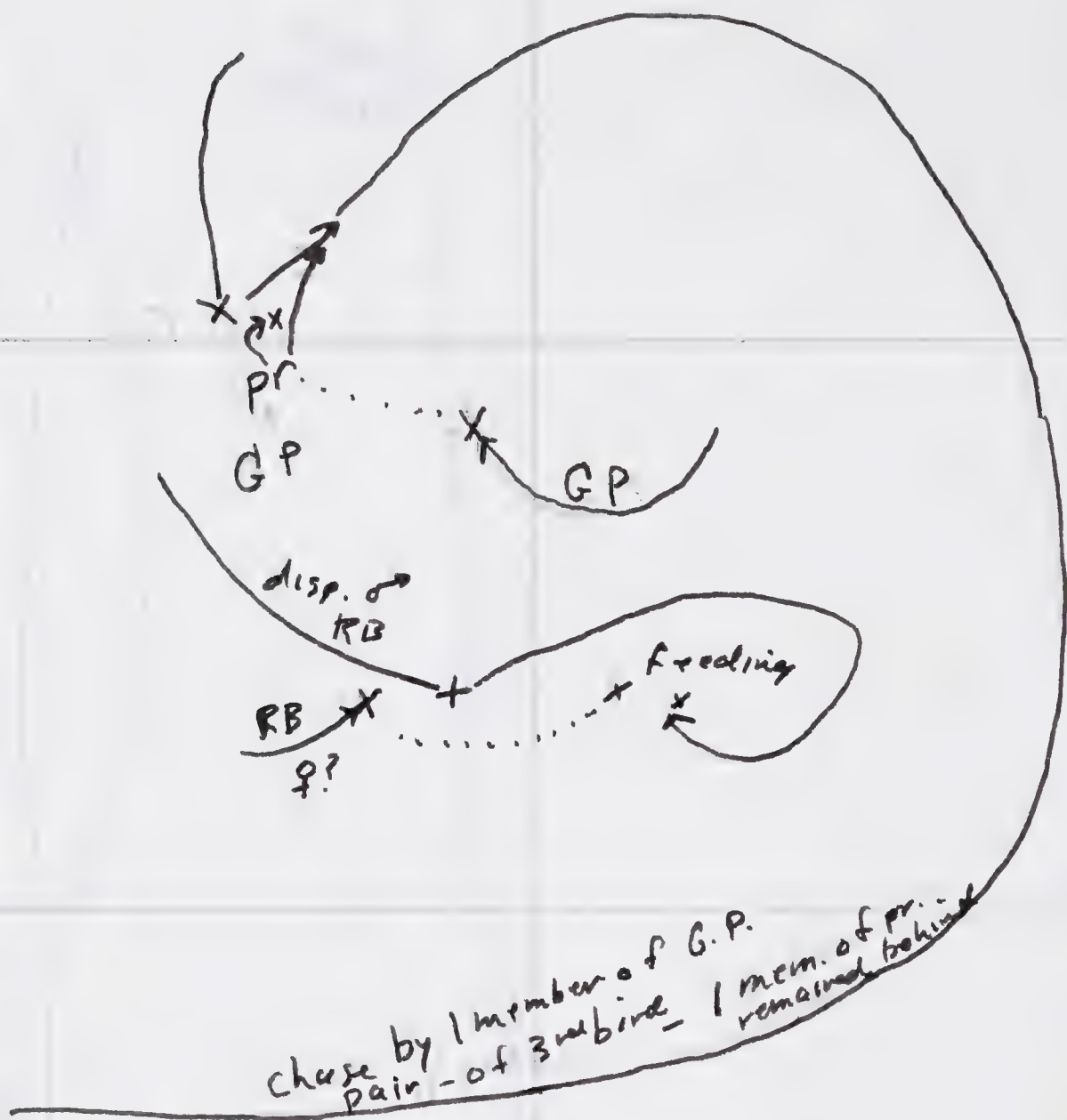
0-2

0-2

0-2

↓

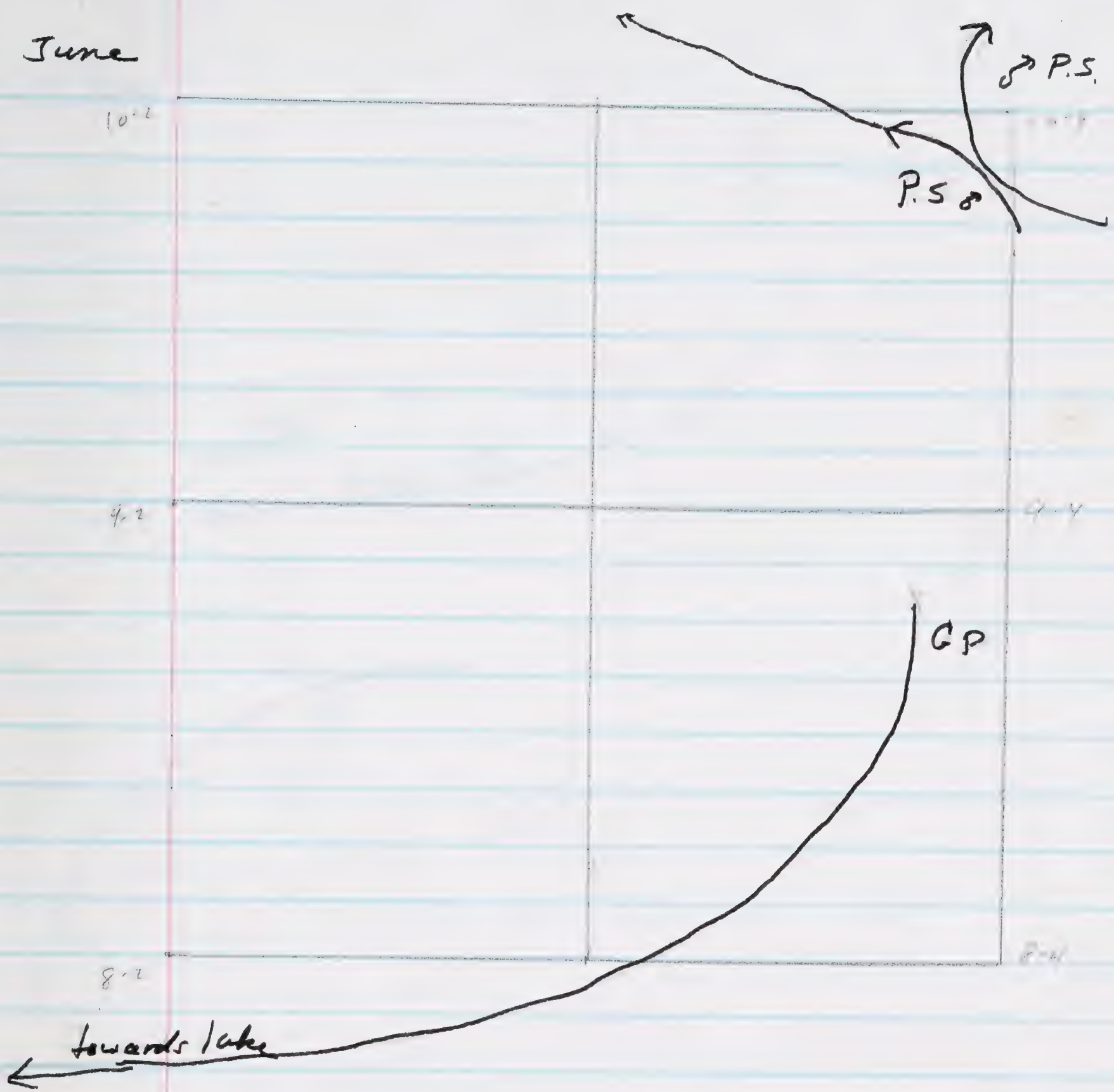
↓



pr.
spect.
Eider

Holmes, R.
1960

23 June



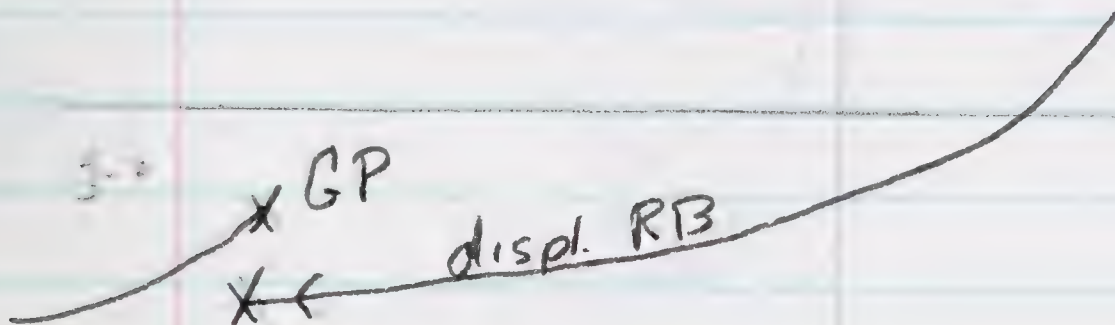
Holmes, R
1968

1.

4-2

4-4

24 June



● P.I. Net

GP - chased
by PJ

displ.
♂ pect. S.

RB ♂
chasing

RB
chasing

RB
♂
displ.

RP-xx Pr

displ
RB

• P. I. Nest
(mel bird)

Creek

res. R.
1960

- 24 June
1960

RB
disp.

LL

mel
PI

PI
pr

chase

x RB

disp
RB

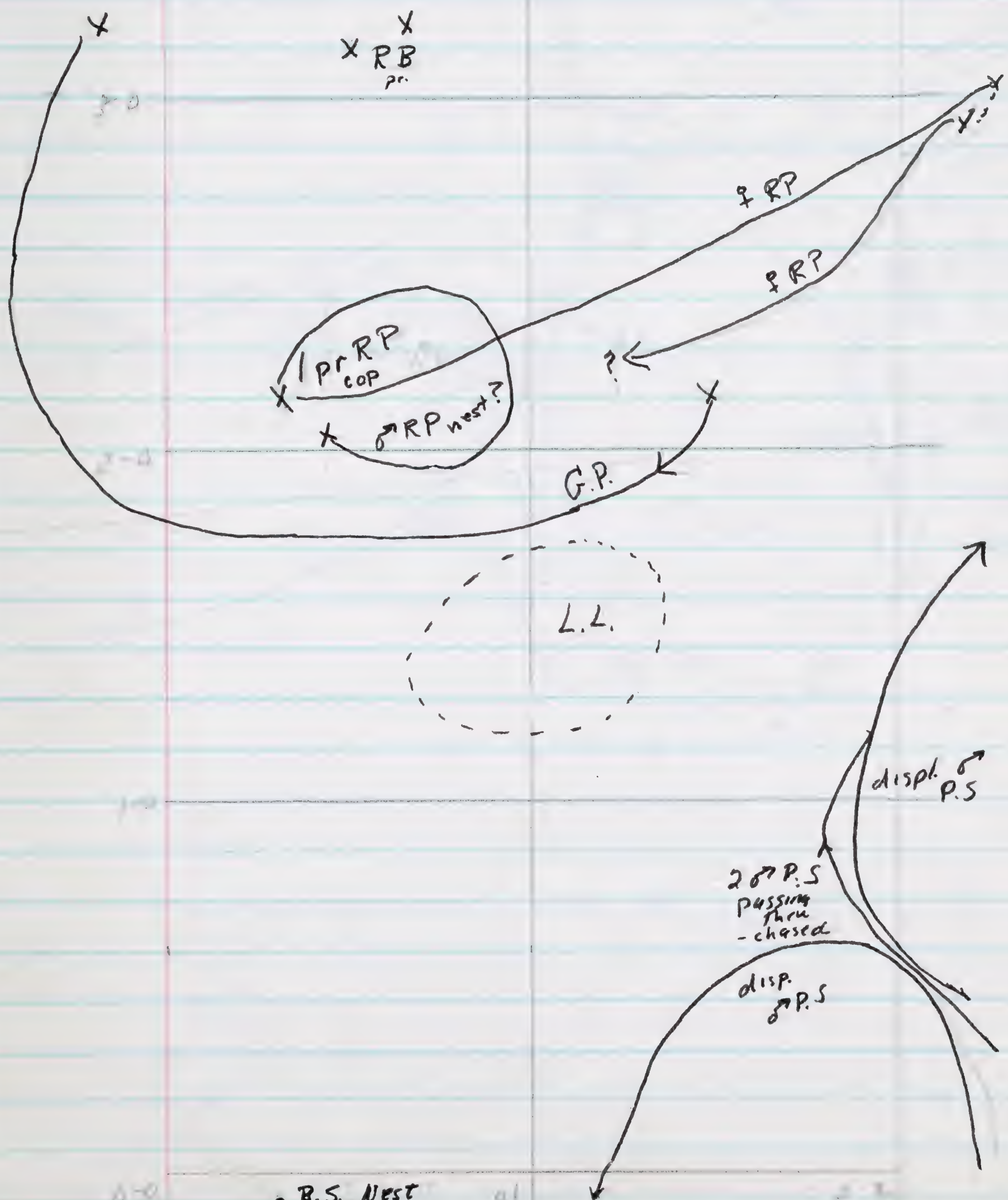
♂ PS

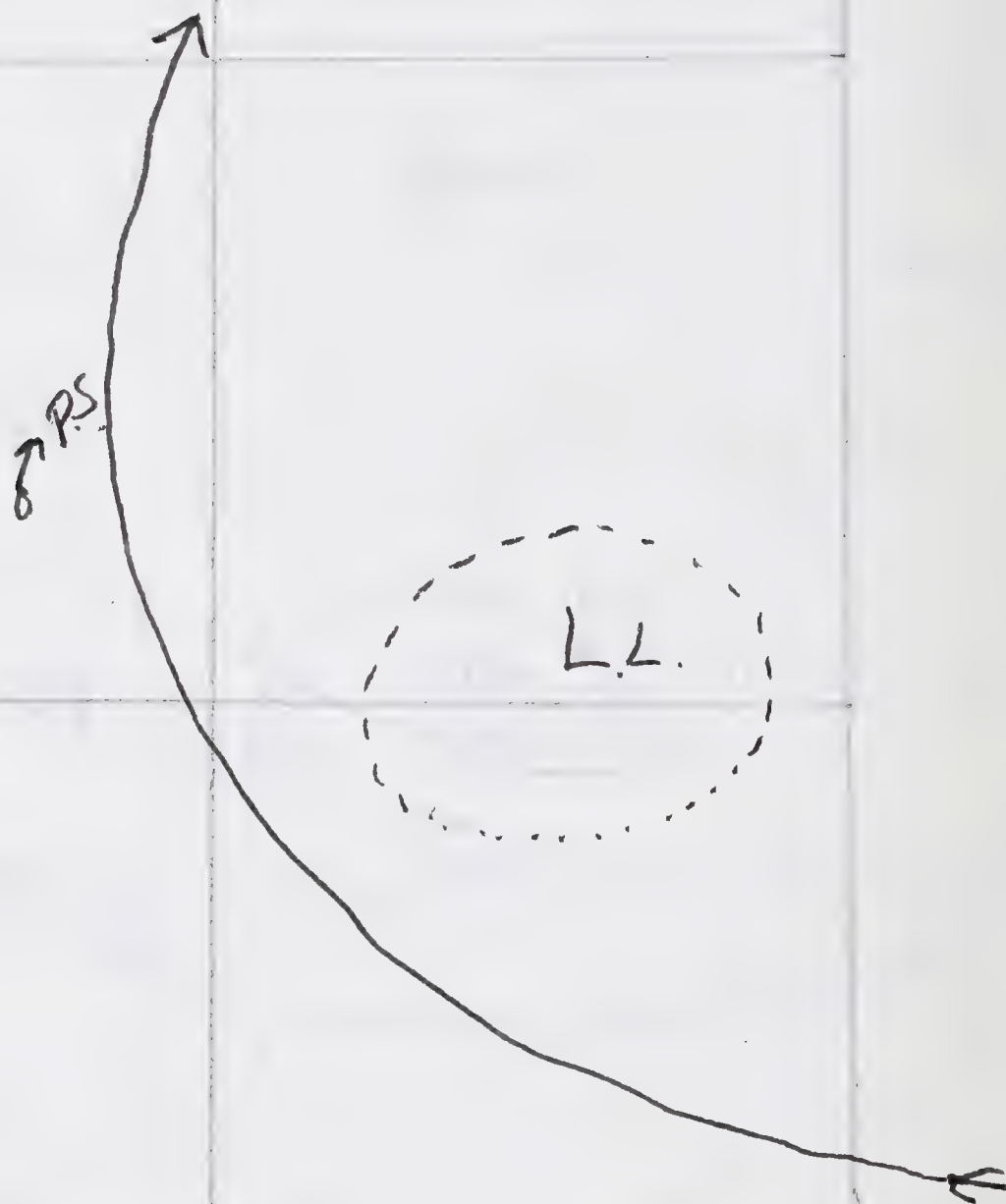
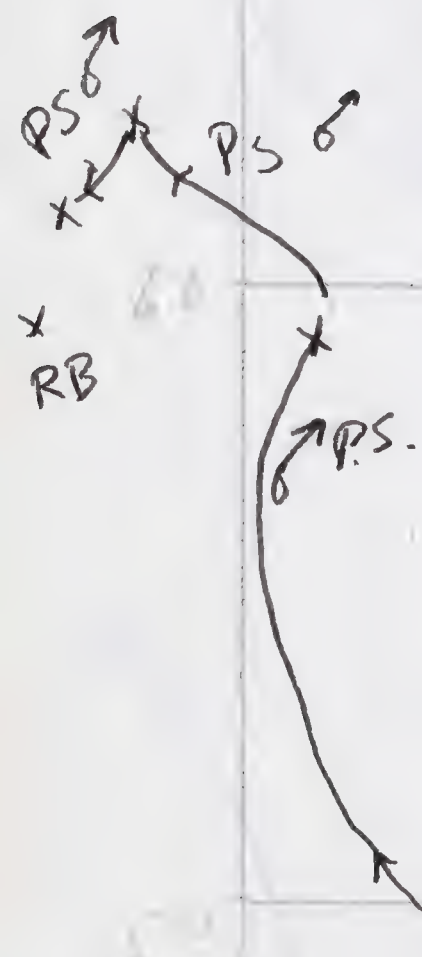
♂ PS

Holmes, R.
1960

4-0

24 June
1200-1600





Holmes, R.
1960

↑ WRS - heard

24 June 1960

Creek

♂ P.S. - 1½ hr after
prev. obsv.

2♂ P.S. chasing

● - RB
nest

Pr
X X - RP

RB

♀ RB

X ♀ RB

♂ P.S.
disp

RB
displ

seen about
5 min after
chase
(see 9-2)
same ♂?

next page



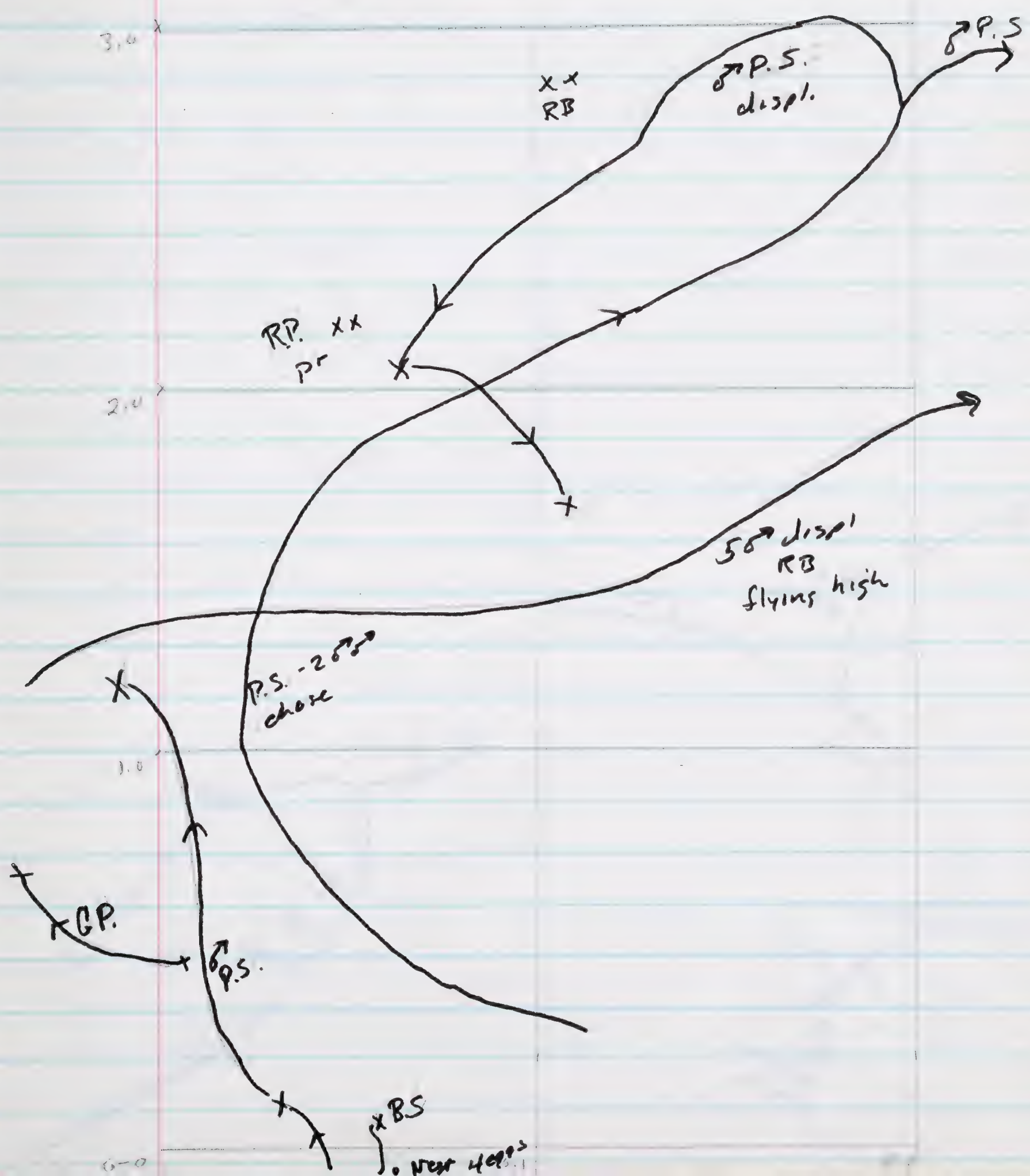
Holmes, R.

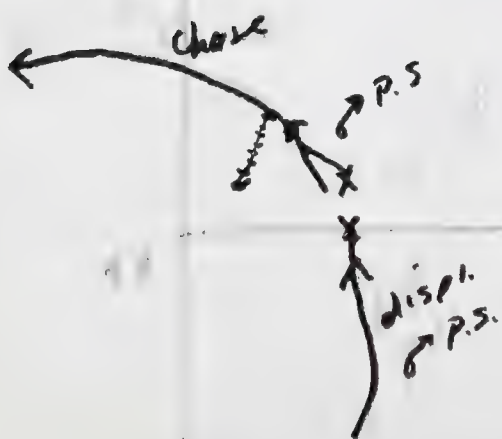
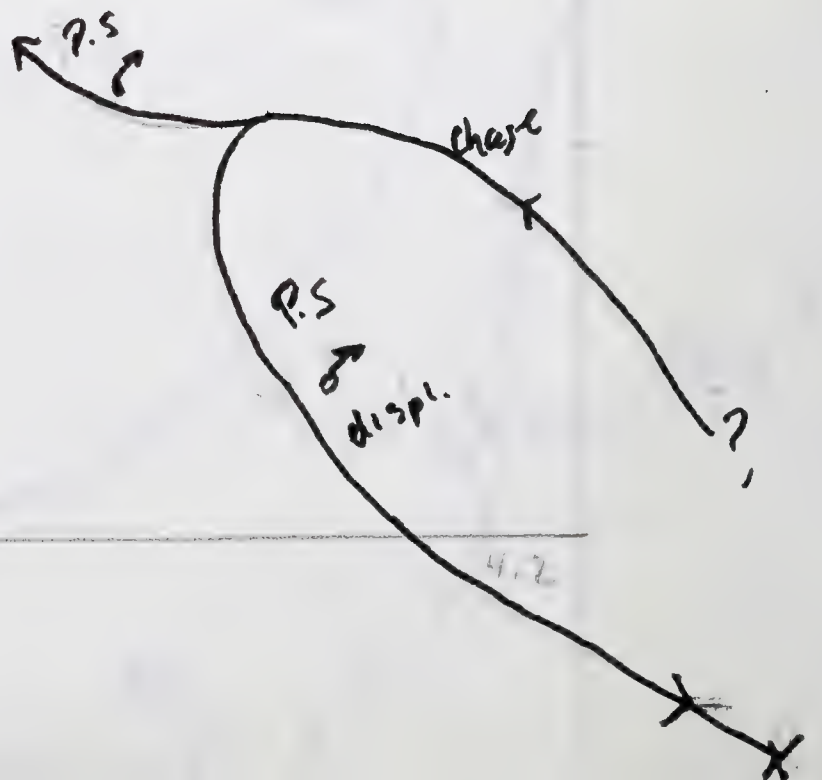
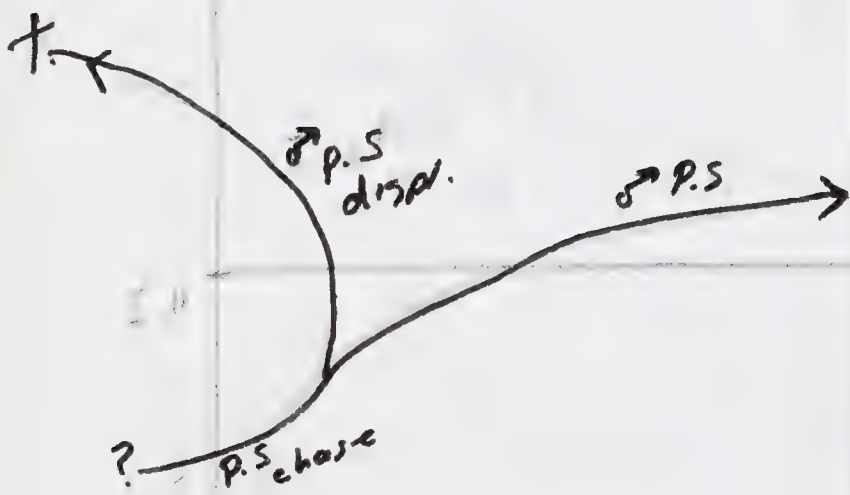
1920 40

25 June

1300-1530.

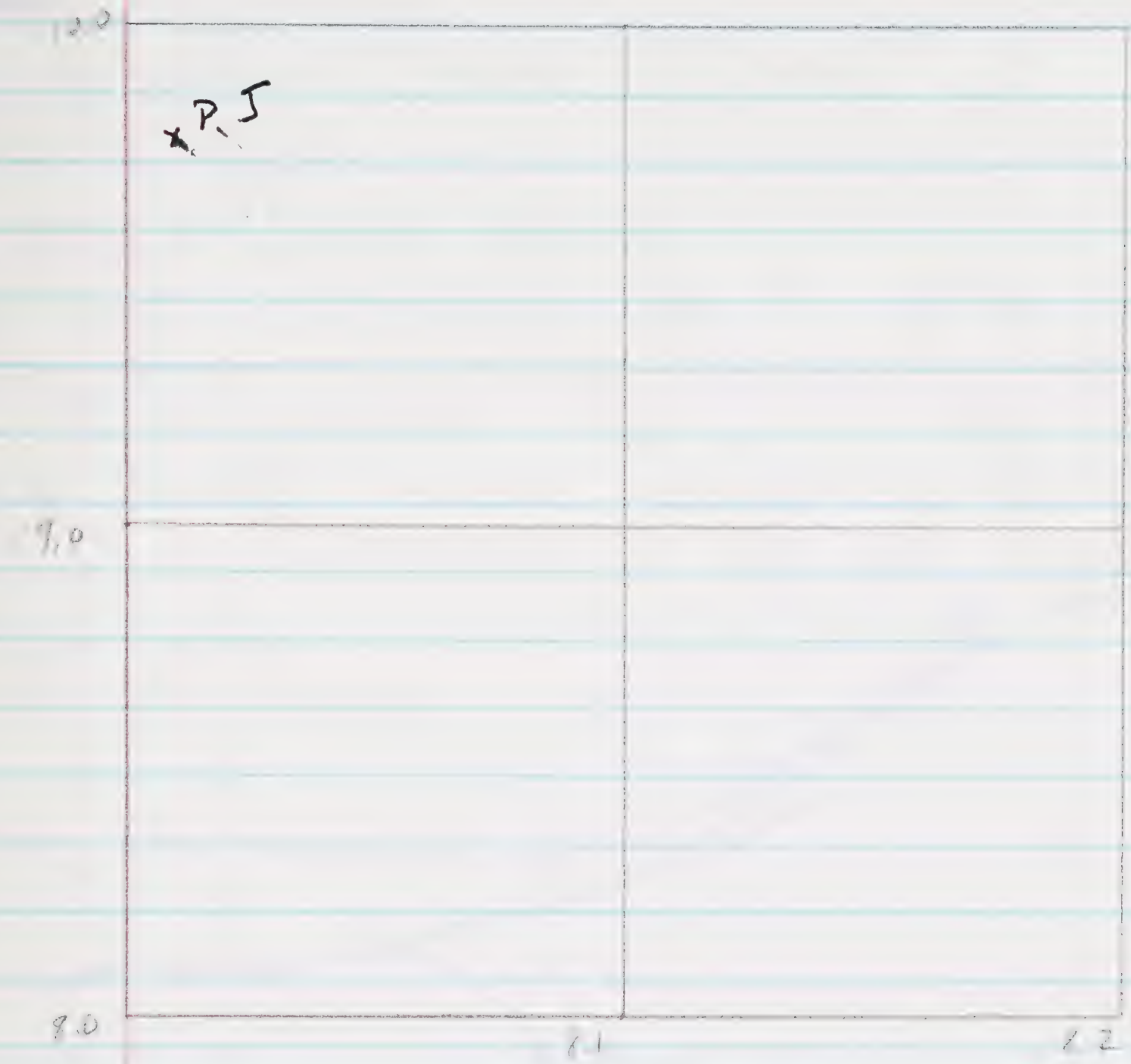
- cold
windy





Holmes, R
1960

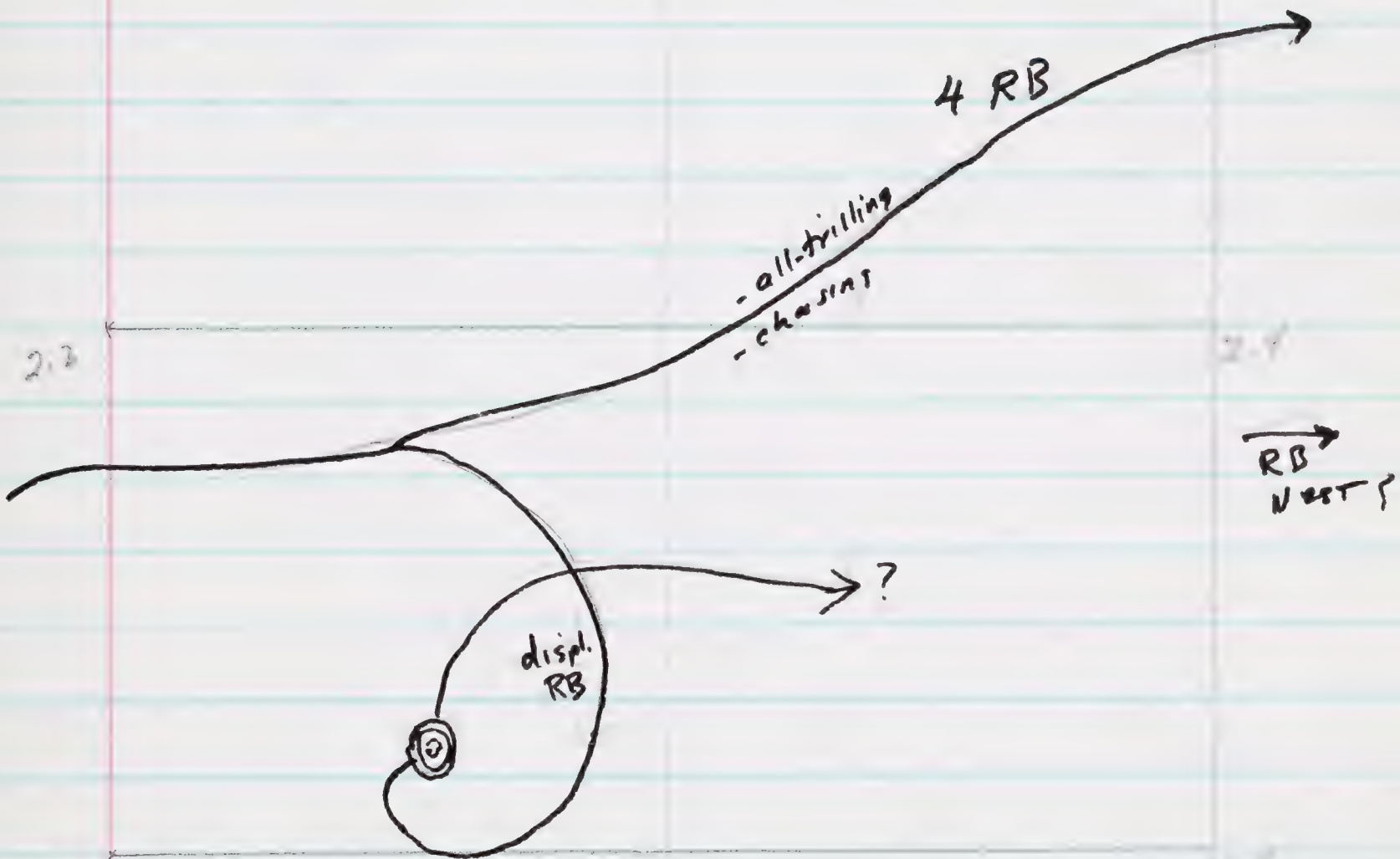
2



Holmes, R.
1960

3

25 June



8.4
displ. RB
x

9.4
xv
pr RP

8.4
Chase
20
P.S

9.4
P.S.

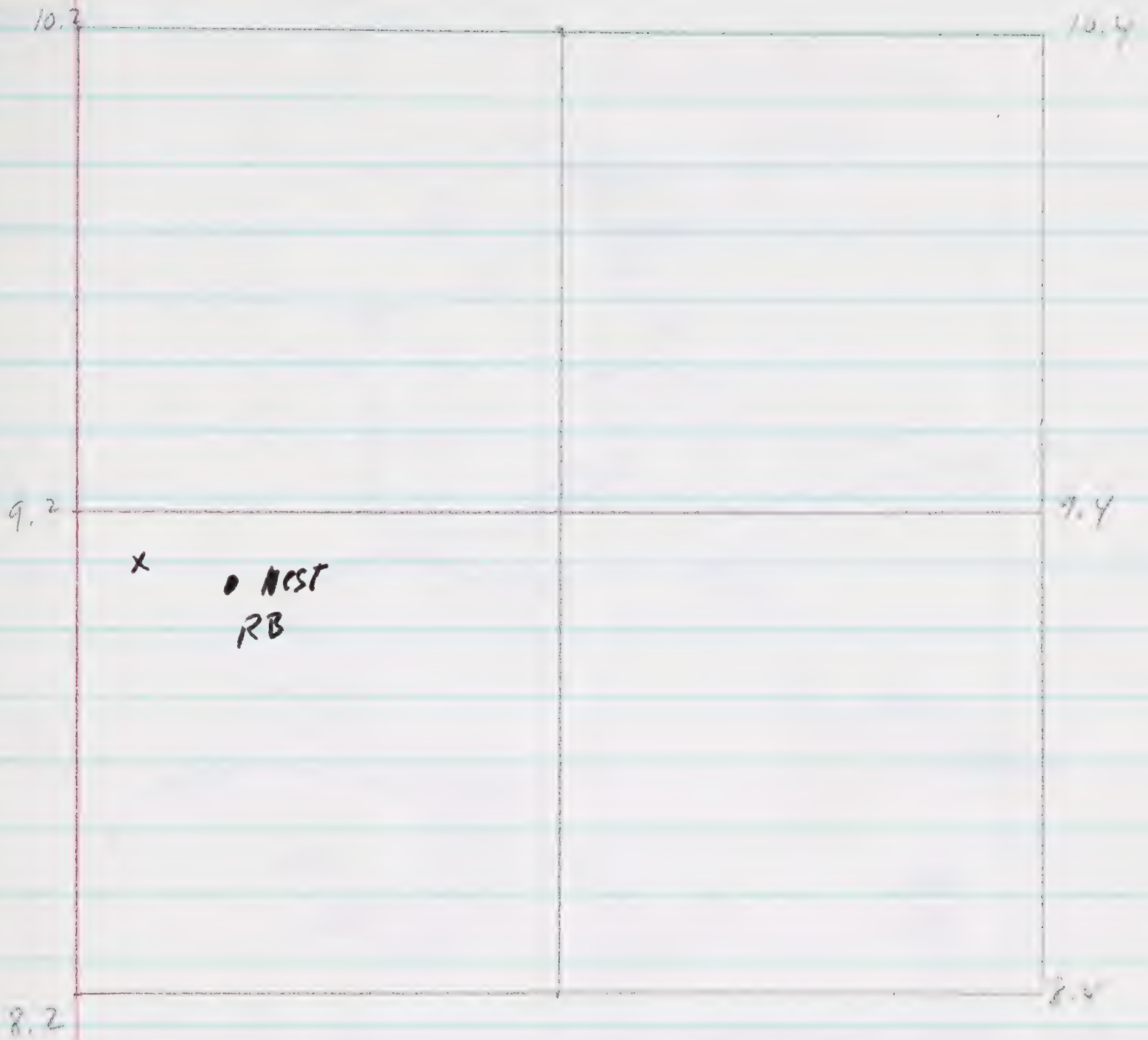
?

x

Hdmes, R.
1960

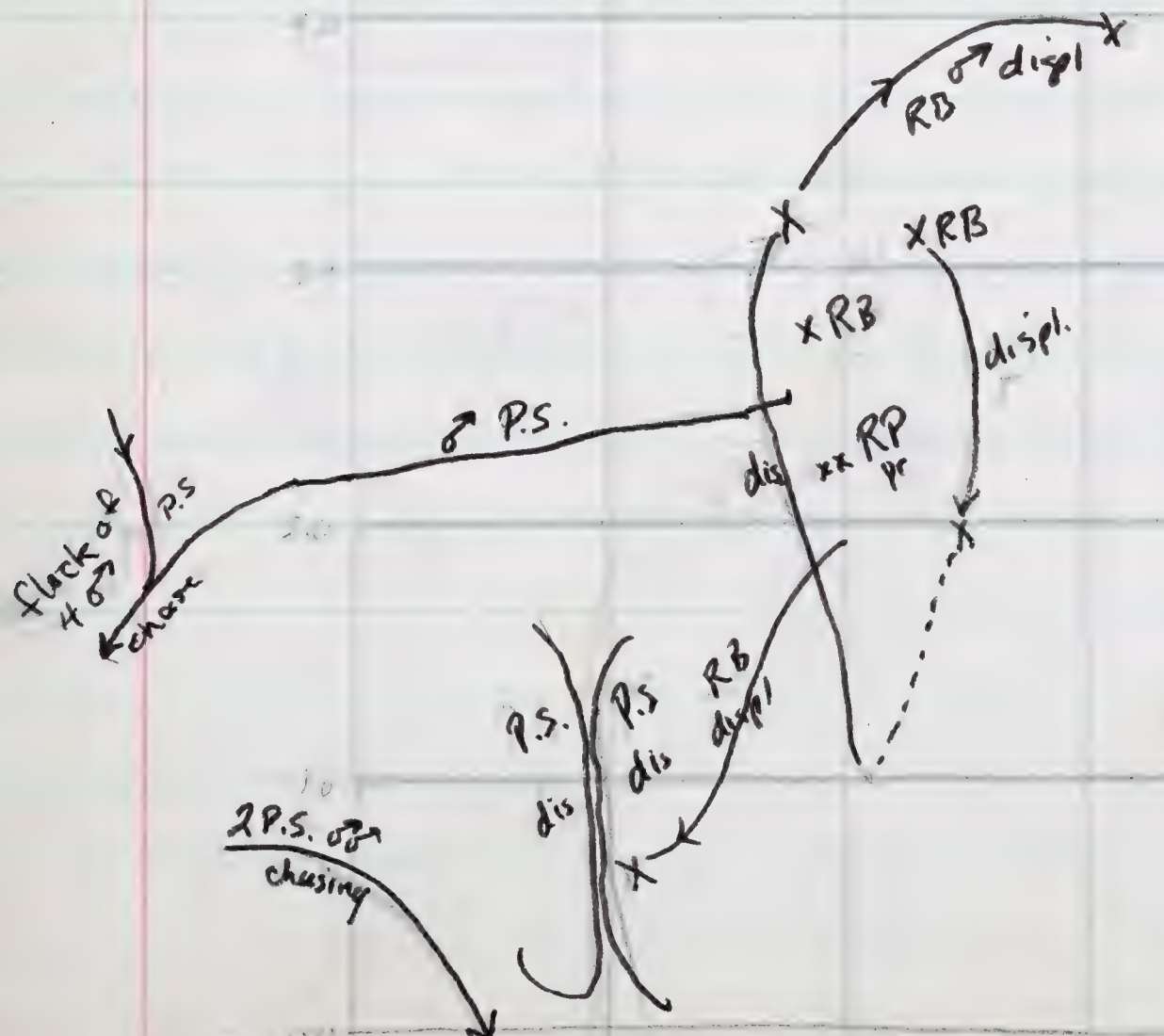
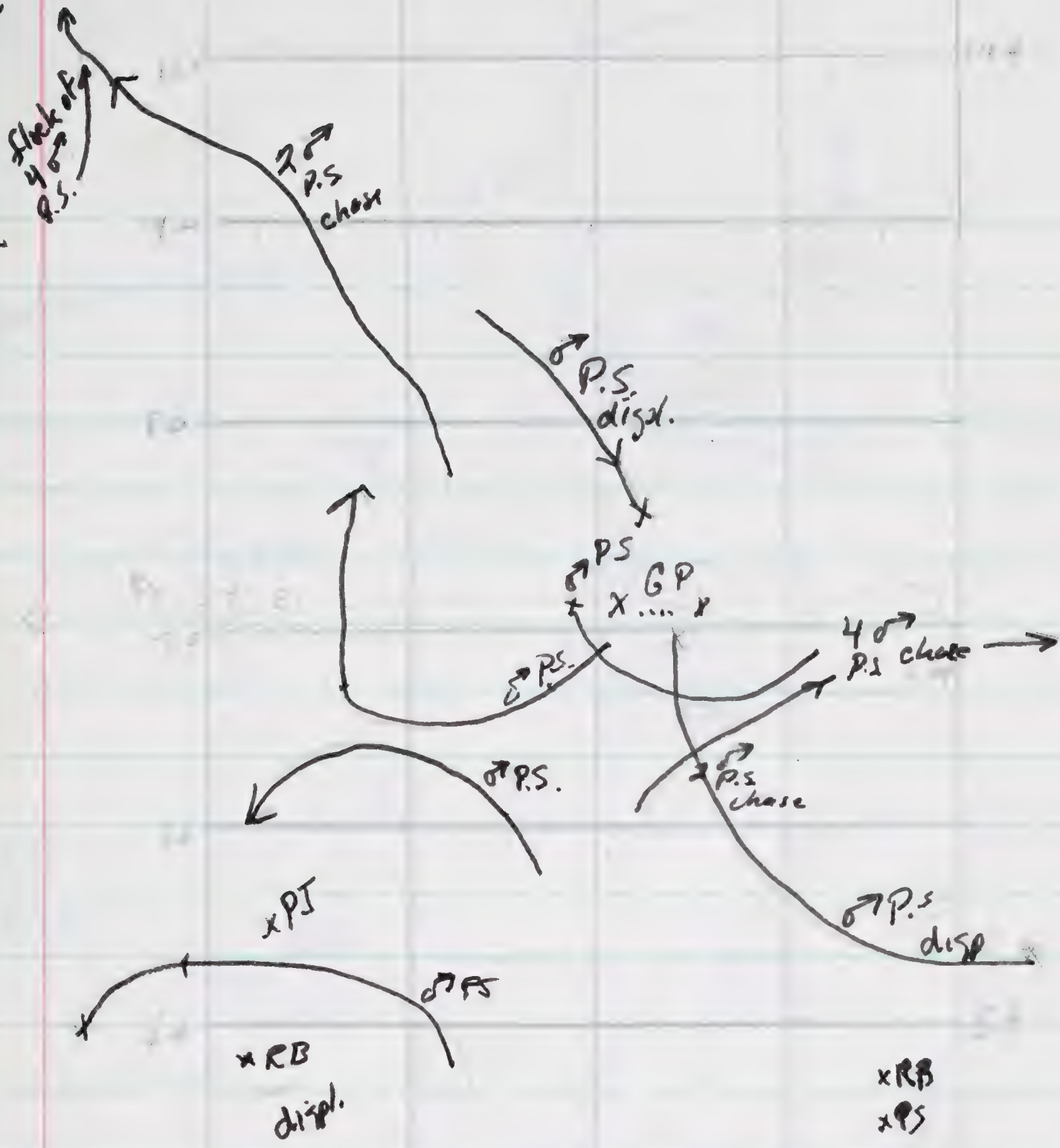
4

25 June



Holmes, R.
1960

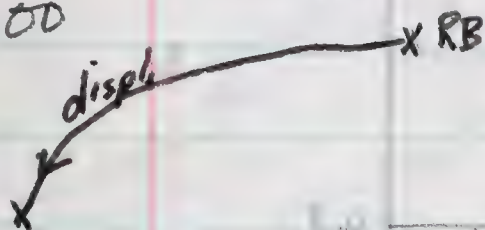
30 June



Holmes, R.
1960

1 July

1030-1600



LL? N?

20 RP
P.S. chase

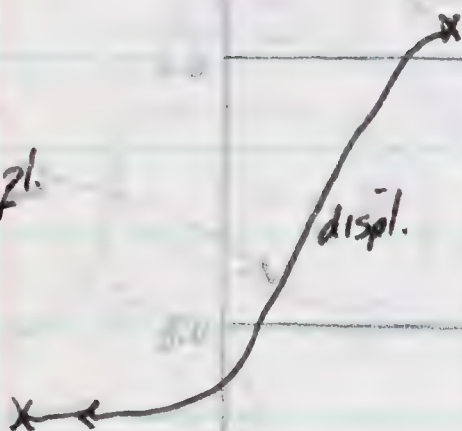
x RB

x ♀ P.S.

x GP

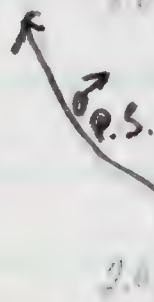
GP #2
nest
- 4 eggs

WRS
displ.



x ♂ P.S. x

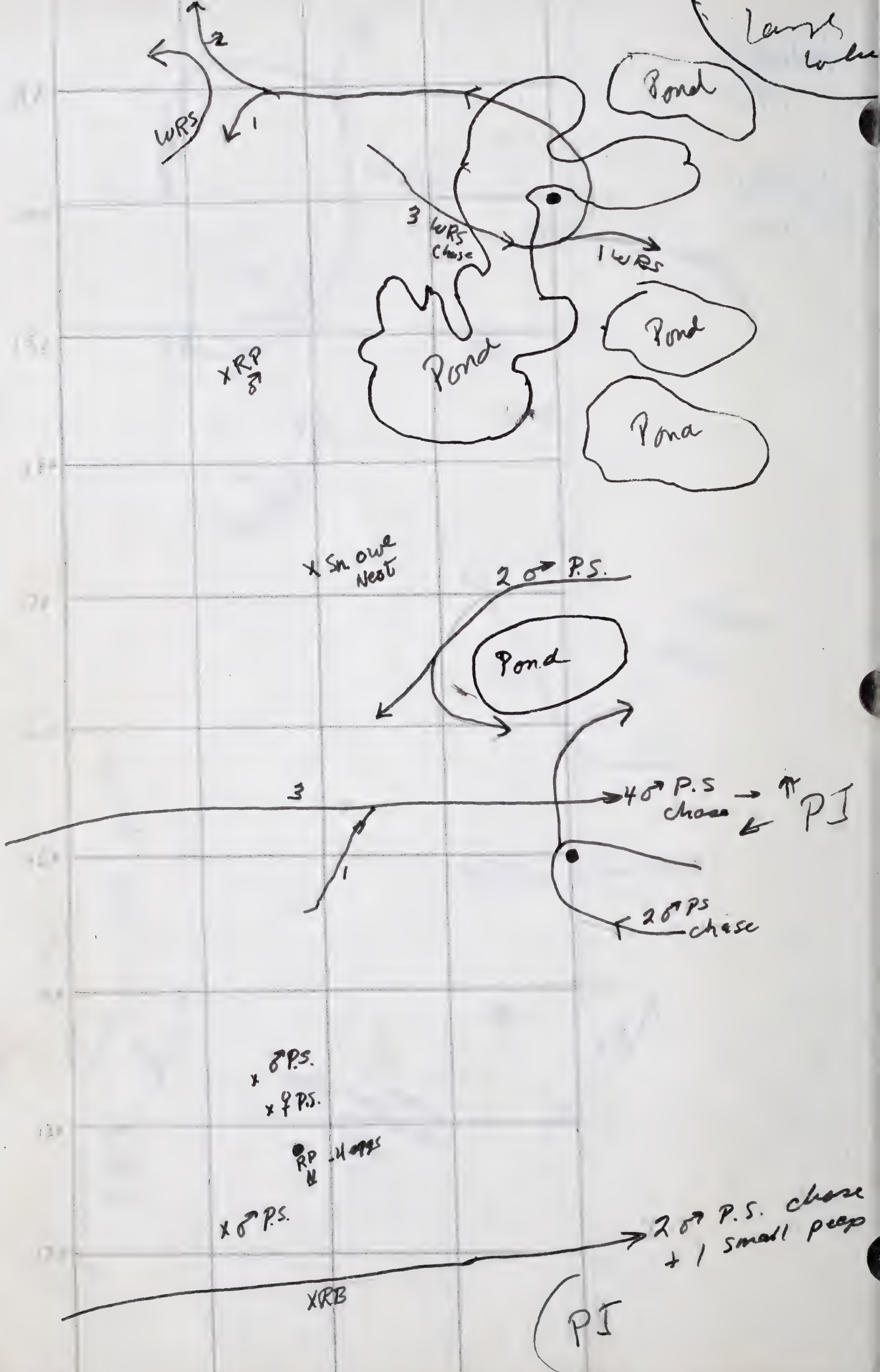
x RB



x ♂ RP Not 30993
x RB GP #1

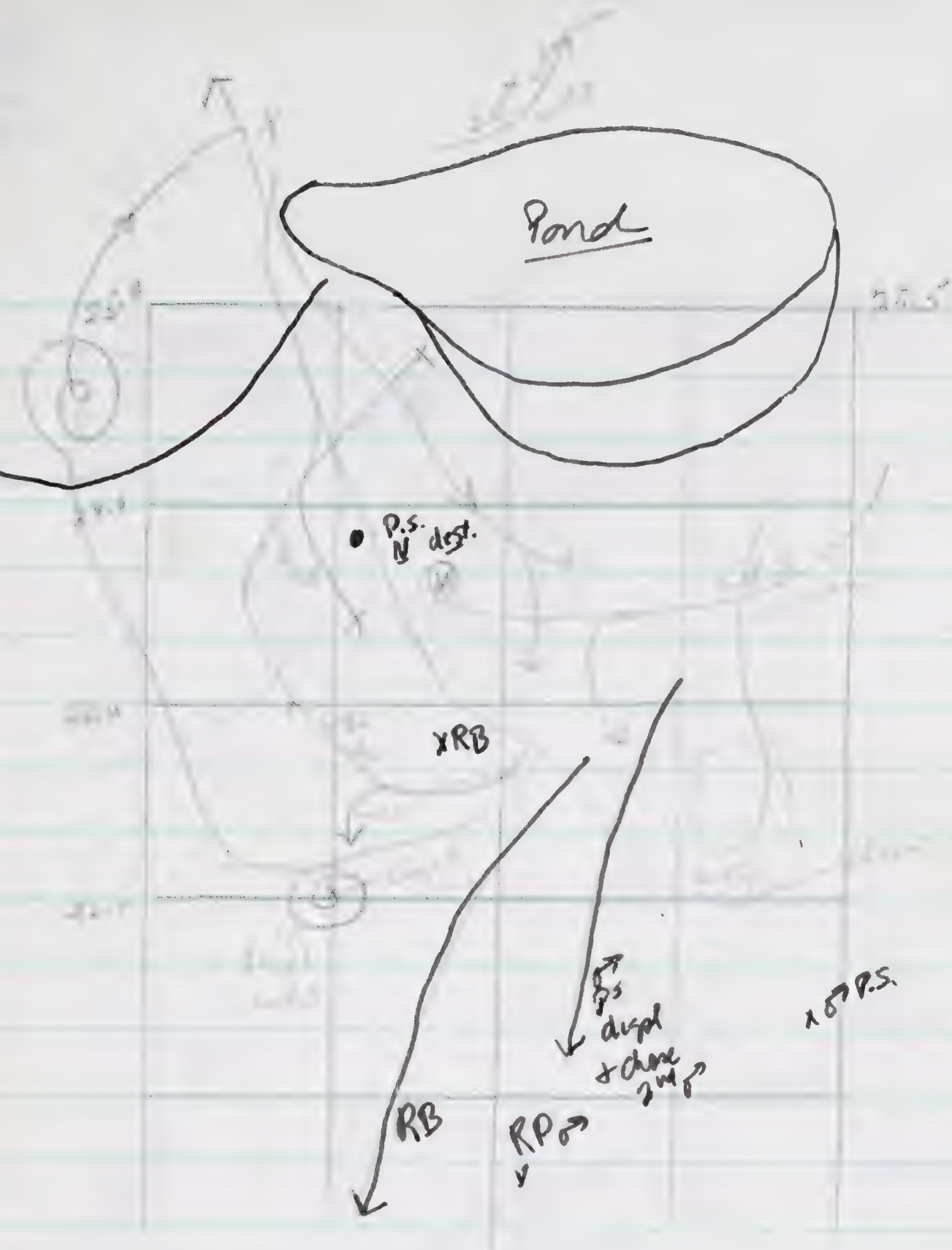


RB
mr



Holmes, R.
1960
1 July

30 →
P.S.
chase.



for fasciicollis see species accounts
for summer

x PIN

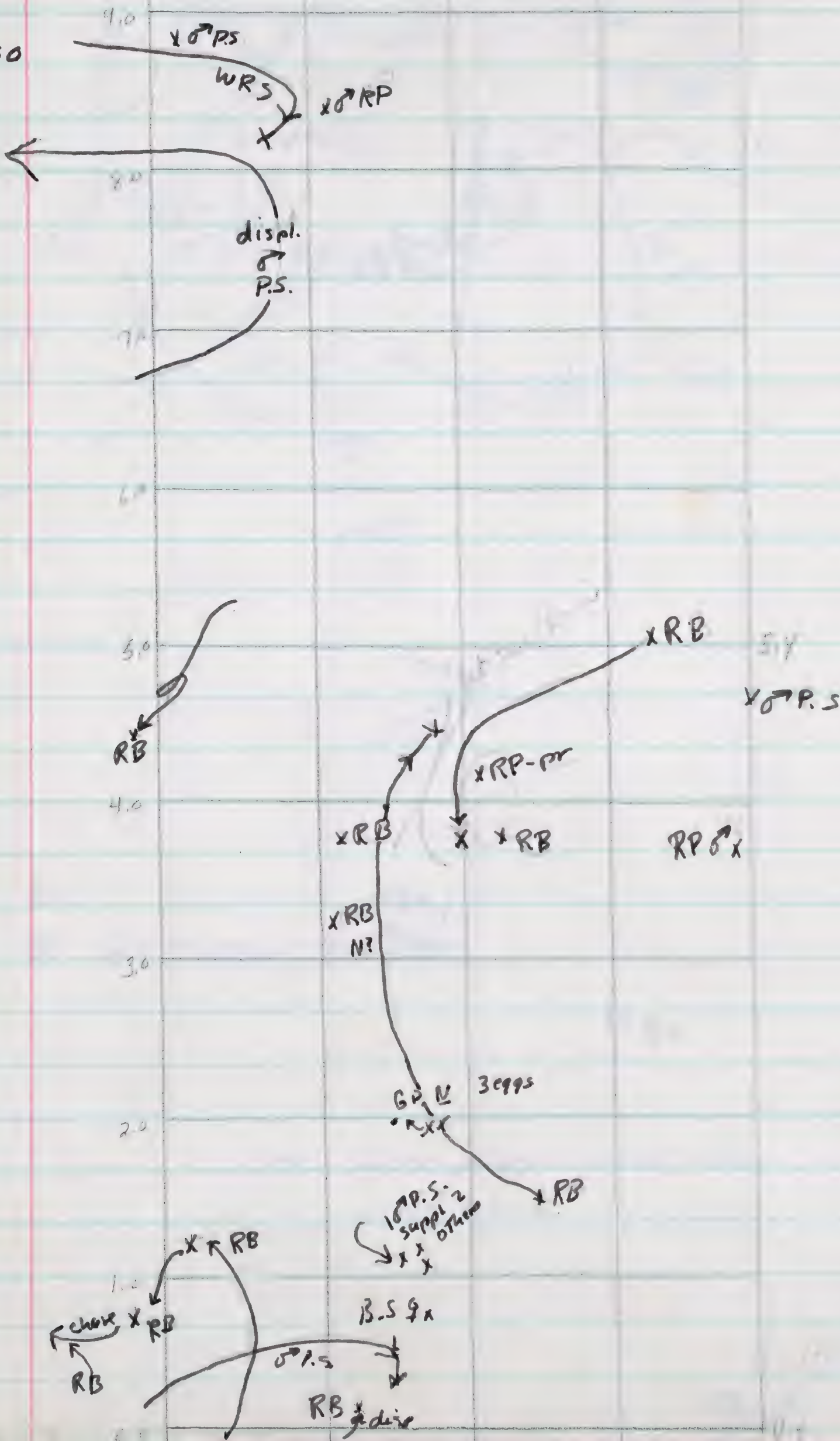
2 eqts
1 pip

Holmes, R.

1960

2 July

1030-1600



65
60
55
50
45
40
35
30
25
20
15
10
5
0



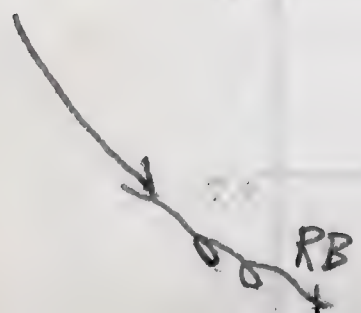
204

x 516 Wc

10 RP
49 RP

204

x 9 P.S



Holmes, R.

1960

2 July

250

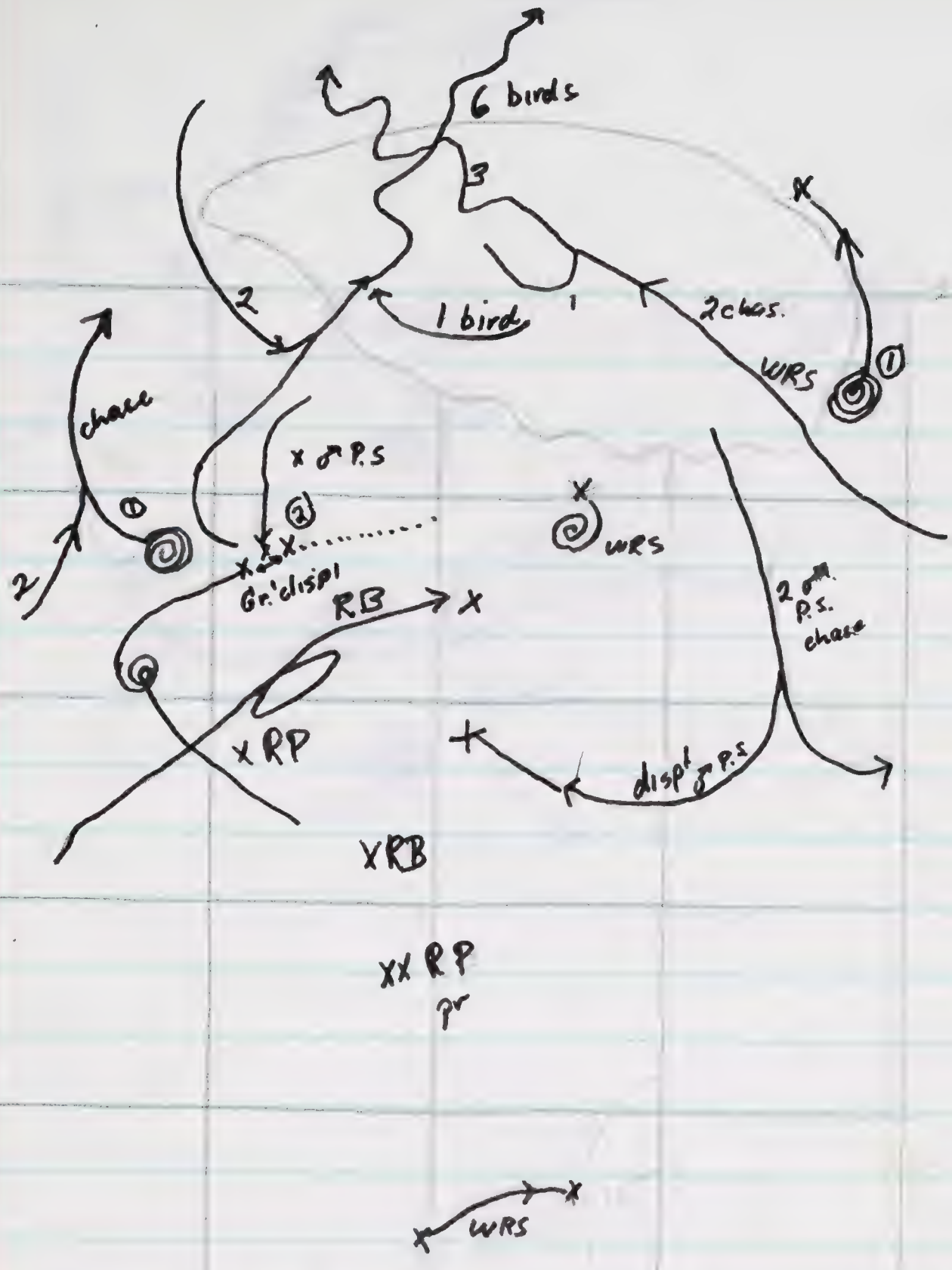
244

220

100

27-2

1998



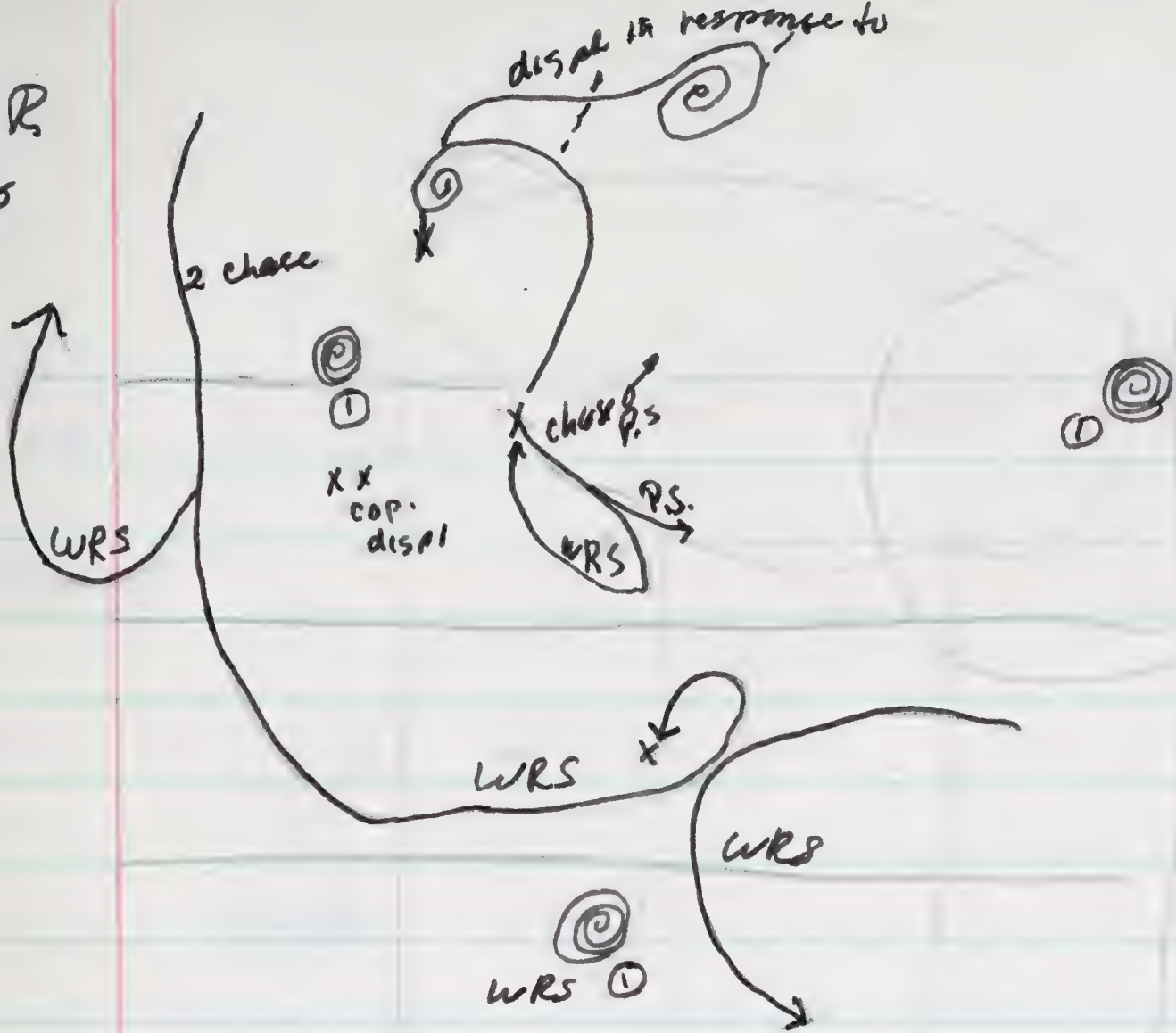
- ① - 2 displays
- ② - See species accounts

see auxiliary sheet for
additional censuses.

Holmes, R
1960

3.
(auxiliary
sheet)

2 July



① - All 3 displ. at once (at 1445).

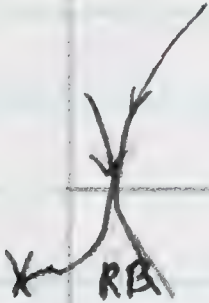
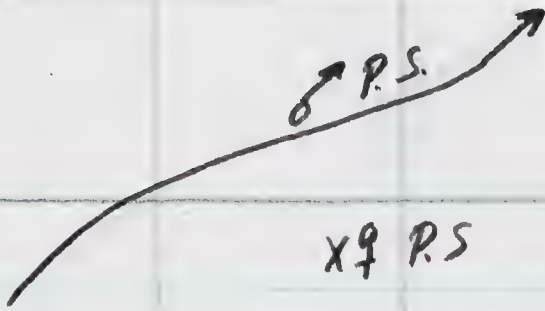
Holmes, R.
1960

4 July

(0900-1130)

- North plot

not censused



XRB

x ♀ RP

PI

x ♂ Sh. O

x Sh. O. ♀ + N

x RP N?

x RP N
eggs cold.
no ♂

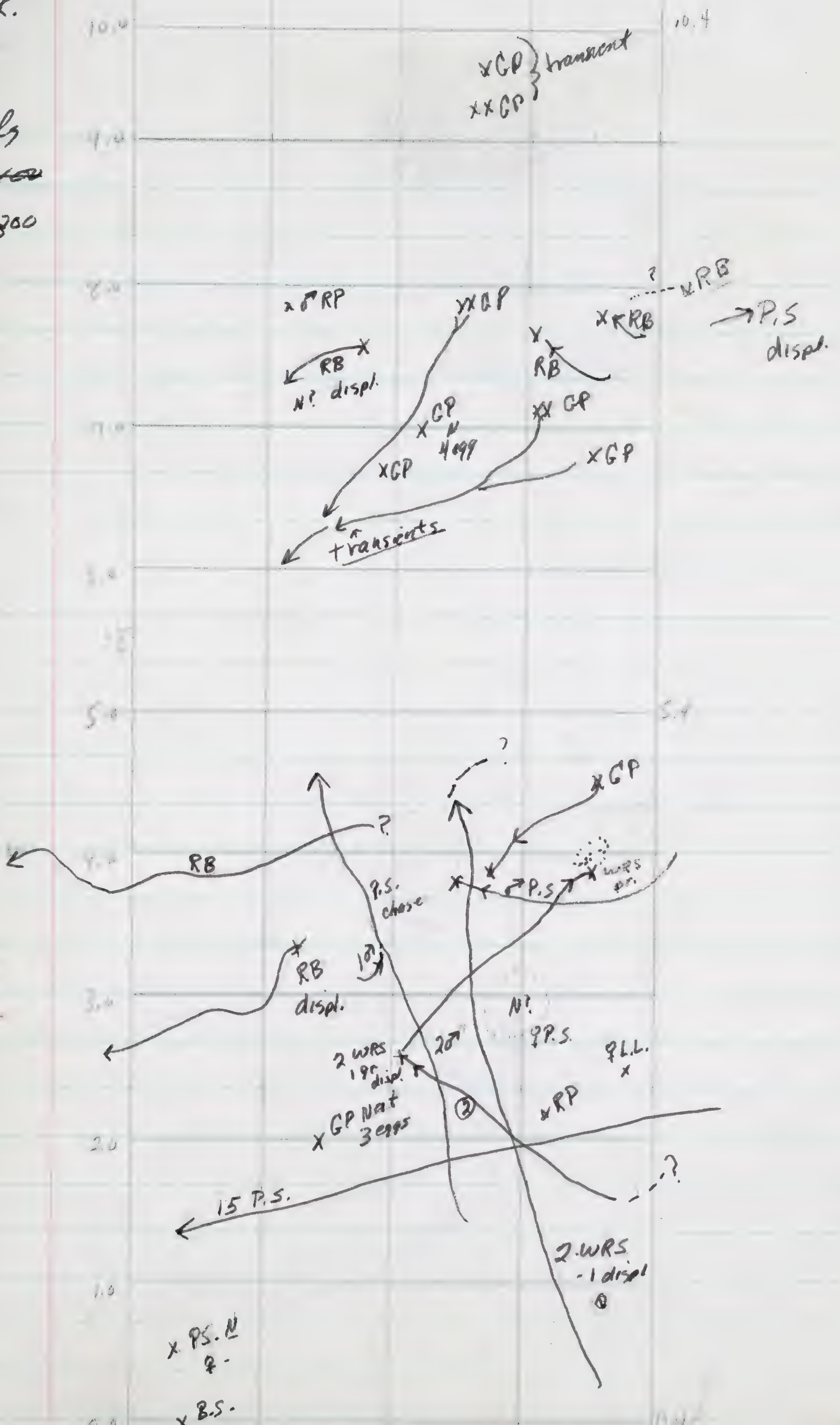
Arctic
Tern

2

Holmes, R.
1960

8 July

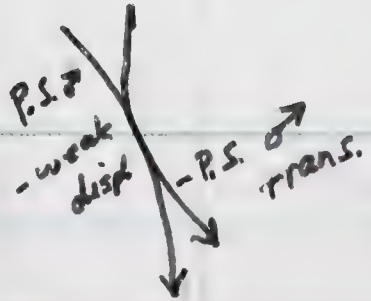
~~1600-1800~~
+
2000-2300



Holmes, R.
1966

9 July
1000-1400
2000-2200

10.0 2.0



6.0

flock of 7 P.S.

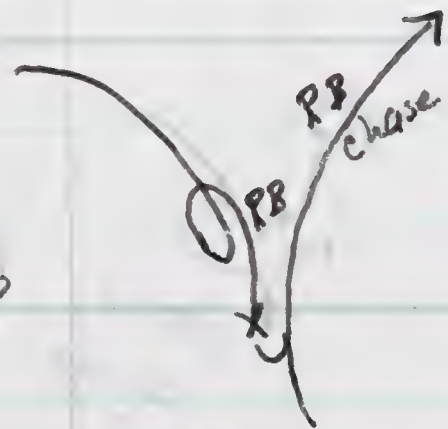
7.0

5.0

5.0

x ♀ P.S.

3.0



2.0

x GP

x ♂ RP

1.0

1.0

RP ♀

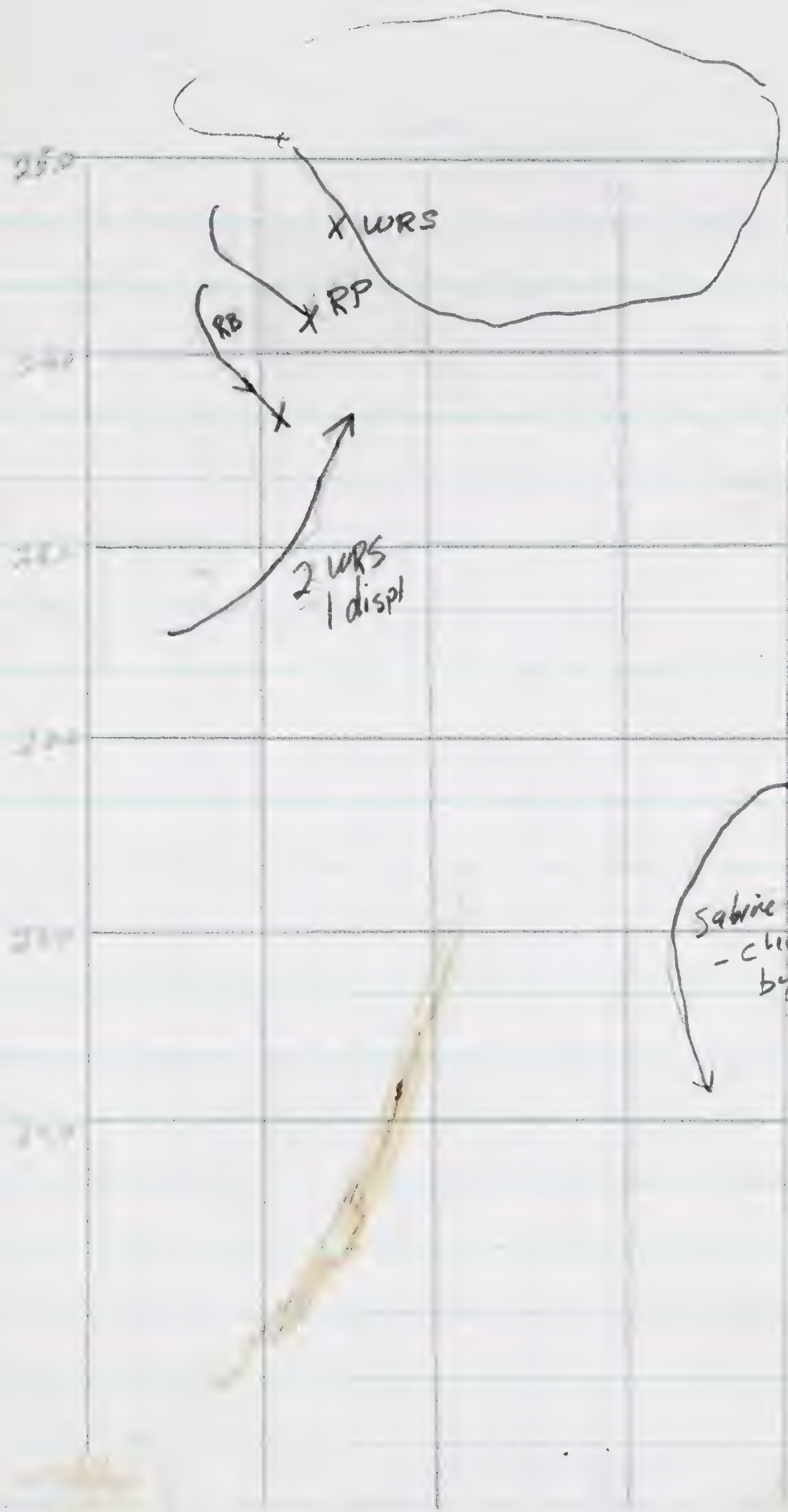
x Sn O
5 eggs

← flock - 18 P.S.
flying high

xRP N
no eggs
?
xx 2 ♂ P.S.

Holmes, R.
1960

9 July
1600-1700
2000-2200



Holmes, R.

1960

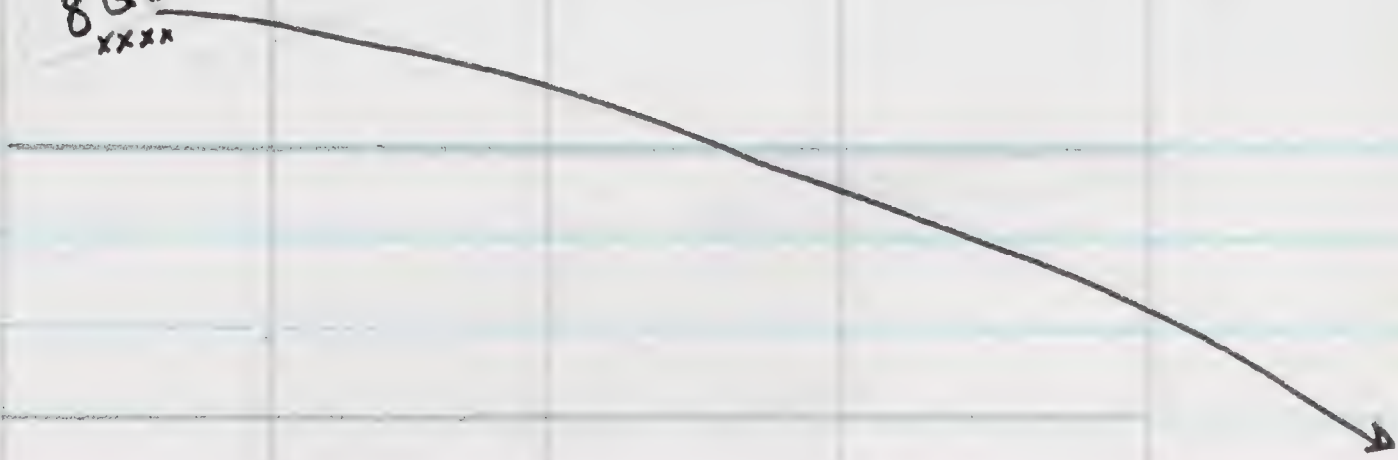
10 July

1000-1400

10.0

12.9

8 GP_{xxx}
xxxx

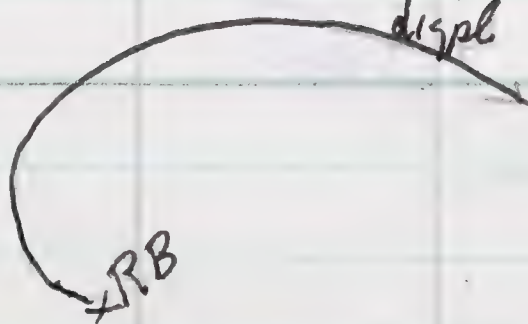


5.0

5.4

xRP

displ



xRB

• PS. N
4000

• BS N
4000

0.0

0.4

← X P.S. ♀
mr

•
Sn. Owl
5-9-55

X P.S.

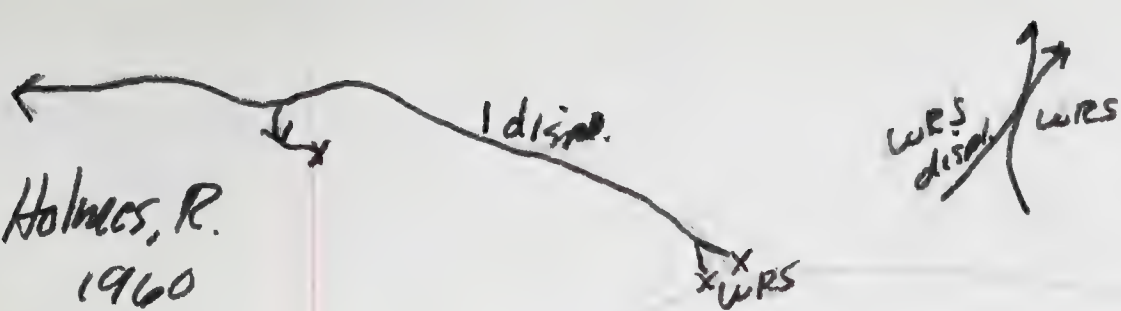
X
X RB

RB
week
dijol.

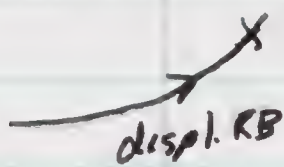
Holmes, R.
1960

10 July

1000 - 1400



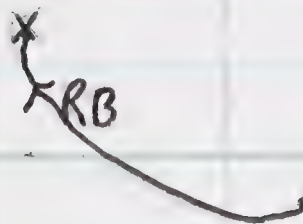
250



220



200



200

RP

Holmes, R.
1960

14 July
(0900-1100)

210

200

190

180

170

160

150

140

130

120

110

X Sn. Owl
Nest
1 pip

2 ♂ P.S

X RP
♂

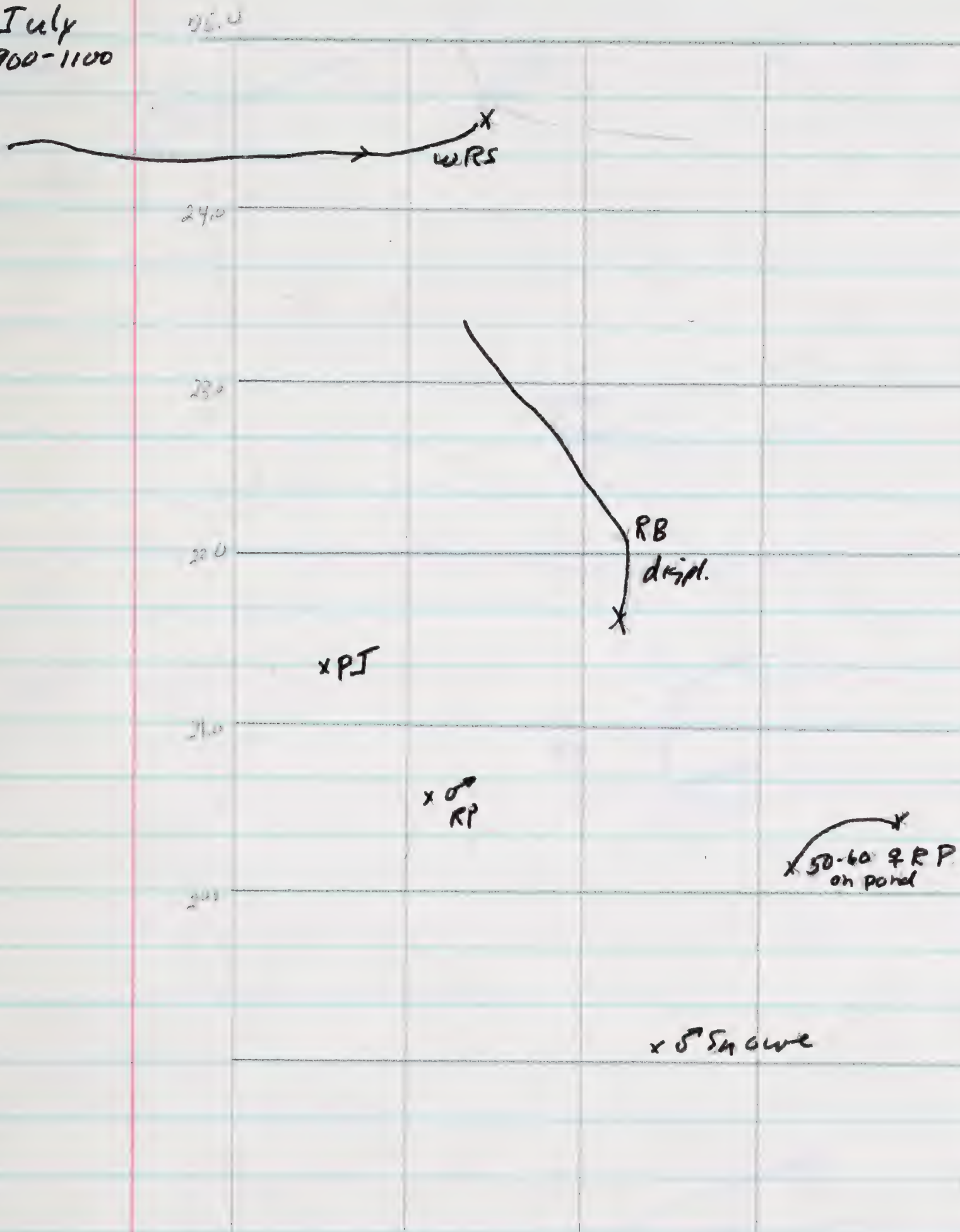
X RD

X RPA warm
eggs present

Holmes, R.
1960

2

14 July
0900-1100

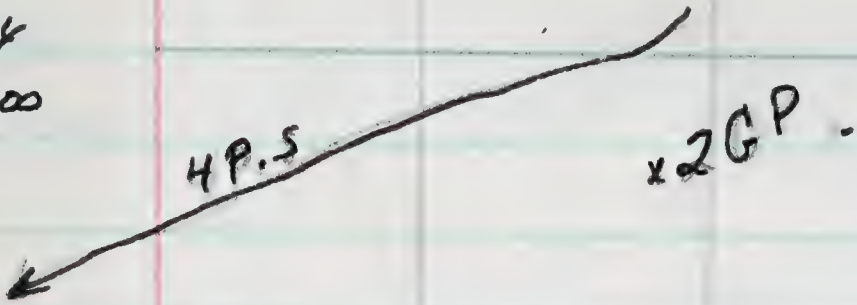


Holmes, R.

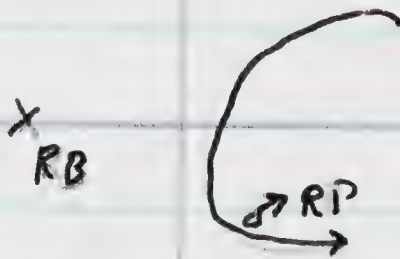
1960

17 July

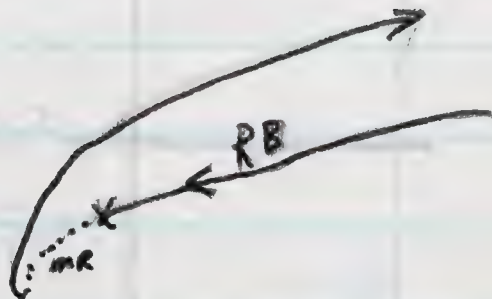
1400-1600



• GPN
4 eggs
• ♀



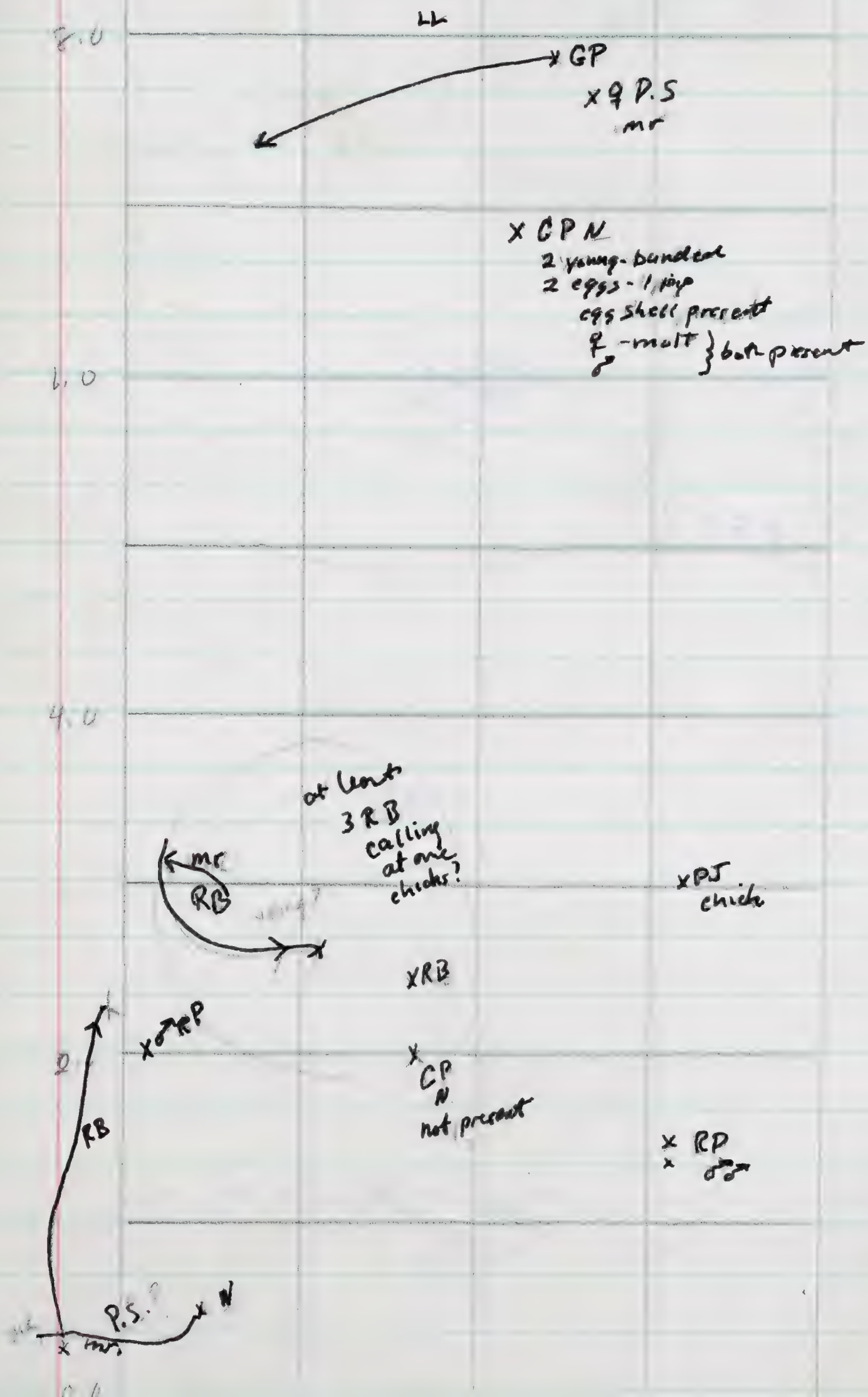
CPN
1 pip
2 not
♀-molt



• RS 4 eggs
N ♀

1.

100



29.0

26.0

18.0

x Sn O
4 young?
1 Pip. 295
♂+♀

♀ PS

16.0

x PRP

17.0

x RPN
3 eggs - cold
No ♂

Holmrs, R.
1960

21 July

Barrow, Alaska

24.0

xRP-5

22.0

4RP
x

20.0



R. Holmes
1959-61

Alaska

Journal

1961 Barrow, Wales. Kotzebue
Map of Wales & vicinity

Holmes, R.
1961

Journal

3 June Barrow, Alaska

Arrived at 1130 via Wren Airlines. The trip north was dull, since a heavy cloud layer obscured the view for nearly the entire trip. I spent all afternoon getting equipment, dacha, talking to Brewer, etc. In the evening I drove to the beach ridge, then to Wohlsehly Slough & up along the shore of Elen Lagoon.

The melt off seems to be proceeding rapidly. Nearly the entire top of the beach ridge is now exposed (it averages up to 100' wide). The north shore of the slough is likewise exposed & even areas in the marsh swales north of the slough are beginning to be exposed. Central marsh in places is stormy through. The snow itself is soft & is mushy in places. The air temp. today must have been in the 40's - very comfortable without a jacket. There was overcast, however. I would guess not more than 10-15% of the ground is exposed.

The birds seen to be. Red-bellies, Semipalm were the most frequent species heard displaying. Two Sandpeeps were seen near Elen. No Pectorals were seen or heard. 2 Turnstones were seen near the lagoon.

4 June Barrow, Alaska

0800-1230. Went west to Uthman area & to Ikroavik. The air force has installed a fog-sensor station

Holmes, R.
1961

Journal

2.

4 June Barrow, Alaska

in Voth's area + have put a gravel road, leading from the village road to the site. The road just misses the Ingleman III A+B, and the site where there are now 3 wanigan is very near the exclosures. They are also building some small station with several posts all over the area - from the edge of the lagoon, almost to Voth's slough.

The wanigan was present in the same location with apparently everything intact. The plot seemed to be ok; the stakes were still standing. About 10% of the plot was exposed + RB were the only pgs that seemed to be present. (one was seen ^{+ others heard} near 5-4).

Lemming sign is poor. The workings of last year are quite prominent, but all the holes which I have checked have been filled with water + frozen solid. No fresh workings have been noted. Apparently, there are some near the village, since the eskimos have brought about 100 into the lot since 30 May. As noted in the specimen account - a few owls have been reported by Pete near the village + I saw one today near Voth - Ft. area. Jaegers are relatively common, but none have been seen to capture a lemming. No fresh pellets have been noted in stumps.

Holmes, R.
1961

Journal

4 June Barrow, Alaska

The weather today was varied. In the morning, there was nearly a white-out with a heavy fog. This cleared, but the sky remained overcast. A wind picked up & it stayed cool for the rest of the day with some sleet in the evening.

5 June Barrow, Alaska

Morning spent working in the lab & checking equipment out of the storeroom. In the afternoon I went to Wohlseh Slough & Elser Lagoon. Bird life was generally good, with Sanderlings very present in good numbers (~11). In the evening, I went to Voth & Britton areas & collected eggs.

The weather today has been cold with a 15-25 mph wind blowing from the east. The bird activity seems to be depressed slightly. The snow is going fast. Many areas visited 2-3 days ago have now enlarged so that brood expanses of ridge tops are exposed. Wohlseh Slough appeared to be too soft for travel & so I could not get to Ootvik Slough. Farnley Lagoon looks mushy & a moat is starting to form. Many of the birds are alarm melting. Muller & Chamberlin arrived today.

Holmes, R.
1961

Journal

4.

6 June Barrow, Alaska

Started to drive to Ikroavik in the morning but broke a wheel track over near Britton's area. No more weasels were available, so I skinned birds. In the afternoon I went to Ikroavik. The snow is going fast. The plot is nearly in the state which it was in when we laid out the stakes last year - which was around 17-18 June, so we are nearly 10 days early this year. The weather today remained overcast & foggy, & the wind changed to No. - it is still blowing 20 mph or more & is rather chilly.

7 June Barrow, Alaska

Spent 2½ hours walking the northern half of the black ridge plot. Bird life was generally poor. The tundra was exposed in a continuous patch along the entire length of the ridge for a width of 30-100 yards. The sides were quite well covered with snow. After censusing, I drove to Egan & Wohlshlog & checked on Peep & attempted some insect sampling. While lying on the ground, virtually nothing could be seen. The duff seems to cover what is supposed to be there, thereby making this procedure somewhat difficult. I took samples from these observed areas & I shall see what was actually there.

Holmes, R.
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Journal

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7 June Barrow, Alaska

In the afternoon, I worked Voth's area again. When I refer to Voth's area, I usually mean the tundra to the north of it - near traplines III A + B -. This means working the ~~two~~ tundra on both sides of the new gravel road. This area is good because there are some pbs - (plentiful) - Redpolls, Pectorals + a few Bairds. The weather today has been poor. During the morning a cold - SE wind blew constantly. In the afternoon this let up slightly but it was still uncomfortable + much observation difficult.

In the evening Chamberlain and I drove to the area so. of the village but could not get across to the tripod area where shorebird activity had been reported that afternoon. Little bird activity was noted. One owl was seen below the village.

8 June

Barrow, Alaska

Spent the morning in the lab preparing specimens + writing field notes. In the afternoon, I went to Voth's area + obtained some good info on Bairds + pusillus (+ agens). The weather began to clear off in the afternoon + by evening the sun came out + the wind calmed down. In the evening I went with Mullen + Chamberlain in the meadows to an area south of the village where

Holmes, R.
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Journal

6.

8 June Barrow, Alaska

My kod sank their weasel. We could not pull it out as it was in too deep & the snow & water had frozen. Incidentally, with the clear water - provided cold temperature - so that the ponds were frozen with $\frac{1}{4}$ " ice by 2100. After returning from the village at 2400.

I went out with the sound recorder, but I had trouble getting it to work. I returned at 3am. & went to bed.

9 June Barrow, Alaska

Sun is still out & the air is generally calm, but a slight breeze picked up during the morning. Left here at 0800 with Dr. Frey, a limnologist from Indiana University. - for Ikroavik. The slough behind Voth's area was impassable, so we had to detour thru Voth's Slough-mare. - which was also rather treacherous - 2-3' water.

The road through Footprint was extremely poor & we were probably the last weasel to make it through. From now on we shall have to go around on the sides. The ditch was also rough to cross. The trucks seem to be about 10-14 days earlier this year, but some of the ponds are still quite frozen. The ice on Ikroavik has begun to melt & water is standing along

Holmes, R.
1961

Journal

7.

9 June Barrow, Alaska

The edge, but there is no moat as yet. The water is just running off the tundra in small streams + this warm, sunny weather today will just further the process.

Sullivan arrived this afternoon + the remainder of the day was spent with him + in taking up lot work. In the evening, he + I went to central marsh, Wobleschley Slough + Elson Lagoon. A fox - 80% white pelage was ~~found~~ seen near the corner of Wobleschley + Elson. He would sit up on a mound, look around + then run away, + do this again. This was the Arctic Fox, Alopex lagopus.

10 June Barrow, Alaska

Sullivan + I went to Veth's Area + vicinity looking for insect plots. A tentative area was picked No 1 of Trophus II A+B. Some trial runs were made with very little results. (i.e. no active forms are now at the surface). In the afternoon we went to the Gasline ridge + beach ridge. The trophus + gasline are entirely free of snow, so they should be run soon. Nothing special in the way of beach life was noted.

11 June Barrow, Alaska

Went with Dr. Frey, lemmingologist of the University of Indiana to central marsh

Holmes, R.
1961

Journal

8

11 June Barrow, Alaska

To check on aquatic invertebrates. In the ponds & pond margins & permanent meadow areas, swarms of copepods & chironomid larvae were found. Phalaropes & perhaps a few Pectorals were the only birds found here. The chironomids are along the surface of the meadows 4-6" / water. They may be picked up with a fine mesh aquatic net.

In the afternoon, I censused Pitelka's plot along the beard ridge. There was a decided lack of birds. Laryzus & Bairdi were common, but very few red-backed orpingtons were seen. - See census sheet. The weather today has remained (warm) & sunny - but a cool wind picked up early. The entire ridge top (plot area) is free of snow & most of the area south of Elson - is almost clear. Central meadow is perhaps 70% clear & has some standing water but not so that the ground is covered. The sloughs are pouring water out to the sea or lagoons & small streams are encountered wherever there is a slope. The tundra appears now - like 25-28 June of last year & the year before. The birds are now laying eggs (Laryzus, Bairdi, redback, etc.) so

Holmes, R.
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Journal

94.

11 June Barrow, Alaska

This whole season is early. 1st Ranunculus.

Lemmings are poor. I have seen only three - one seen today behind the lot in the edge of the drum area. The villog sample has declined considerably - to almost nothing. No signs are seen in the tundra - other than last year's runways. The holes are blocked with an ice plug - so the presence of lemmings can be precisely obtained. There are some areas of high polygons where they may be - but they are now hard to come by. The predators (jaegers & some owl - gues) are still here & may well finish off the remaining animals (altho the 1 caught today - was a pregnant ♀).

12 June Barrow, Alaska

Stayed in this morning to check out supplies & finish specimens. In the afternoon, I went to the area No. 1 Troughs IVA-B & set out the insect sampling area (for description see insect sampling sheets). The evening was spent in sorting samples. The weather today was clear with a slight wind, blown from the NE. A fog arose in the late afternoon.

13 June - Another clear & almost cloudless day. A breeze came up in the late morning.

Holmes, R
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Journal

10.

13 June Barrow - Ikroavik, Alaska

and persuted for the remainder of the day. I left at 0730 for Ikroavik & arrived there at 1000. Footprint & Voth Creek were flooded, making it necessary to go via Renali Gate. There was an amazing plenty of shorebirds with no sandpipers seen until after I crossed the gate. Occas. jaegers were seen; one caught a lemming near the gate.

A moat had formed at Ikroavik & the wangan pond had opened up & was 70% free of ice. The plot was 95% clear snow with only small drifts left. The bird activity seemed poor. RB were the only ones which appeared common; Pectorals were in short supply, but small groups of 3-4 birds were seen flying by so possibly, more are moving in. Golden Plovers were not common, and sev. Chases were seen where I was once be chasing a third. - in one case, this seemed to be a dig for one of the ♀ (see spec. acct) - so ♀ may be in short supply. No white-rumps were seen or heard at the So. end of the plot.

Insect sampling areas were chosen & samples taken. I left for the camp at 2000 & arrived at 2100 - since Footprint had drained sometime during the day.

Holmes, R.
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Journal

11-

14 June Barrow, Alaska

Spent entire day in lab working on insect samples. Finished around 2030 + wrote notes for remainder of day. Weather clear - with patches of fog.

15 June Barrow, Alaska

In morning, I went out to the beach ridge + Cloon - Wohlsehlog area. The weather was windy + overcast - Normal Barrow weather. The clear skies which we have been having for the last 6 days has speeded up the melt off. So, that now the only snow left is where drift occurred - especially along the ^{w + d.} slope of the Beach Ridge. The sloughs are all open, from all drained; I hear from Andy Crane that the regular road to Footprint is now open. Central marsh now flooded this year, since melt-off + run-off were continuous; this holds for other areas as well as C.M.

In the afternoon, I went out to Voth area took my soil samples, etc. The evening was spent in picking insects.

16 June Barrow, Alaska

The morning hours were passed doing continuous insect analysis. In the afternoon Bohsack (Dr. Kurt.) from San Diego State College arrived + we talked up until dinner. In the evening, Bohsack, Sullivan

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12.

16 June Barrow, Alaska

and I went to the Nalaktuk in the village.
The day was overcast, ~~overcast~~ ^{coastal} & a little windy.

17 June Barrow, Alaska

Took Bohussock to Beach ridge, central marsh, etc. to look over the tundra. Several soil samples were taken to try out his Berlese, which are makeshift, but get small and portable. In the afternoon, Sullivan and I put out the traps near Voth's area & I censused Pitelka's Plot. Bird life was extremely sparse in the plot - only 2 double-crested cormorants, 2 pairs RB (incl. 1 nest), etc. See species accounts. Weather today has been warm & boiling - with clear coastal skies - fog probably in high 40's or 50's.

Lemming activity is still poor, only a few have been seen. Muller & Chamberlain have flown to Pitt Point to check on lemming abundance and to run the traplines.

18 June Barrow, Alaska

We stayed in the lab all morning working up insect samples. In the afternoon, Bohussock & I went to the area no. 1. Trapline IVA+B - & I took more insect samples. In the evening, I went with Sullivan to the trapline - since the slough-crowns

Holmes, R.
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18 June Barrow, Alaska

West of camp was rather dangerous. The wind blew fiercely today with gusts to 30 mph. It calmed somewhat in the evening as the wind shifted from SW to NE. - Bird activity was poor in & near Voth's area.

19 June Stayed in all day doing insect samples. The weather was cold & windy - with a NE wind blowing.

20 June Barrow - Ikroavik, Alaska.

Took Bohusack & Sullivan to Ikroavik. Weather overcast with areas of sun & fog. - Bird activity poor. No pectorals seen on plat & only 1 seen on the trip (near RBR). RB were relatively common. 1 Nest was found near the 0.0 end of Tropic III A+B & near the new road to Voth's area. It was among the clumps of grass & low shrubs with small piece of cut grass - 4 eggs. Others were seen & collected along the way, but actually few were found on the plat. In the evening, the weather cleared & I went to Voth's area & vicinity for the purpose of recording bird songs - during 2 hrs on the tundra. 1 RB was heard directly &

Holmes, R.
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Journal

14.

20 June Barrow, Alaska

No pectorals - altho 20 ♂♂ were seen standing + feeding. Occasional longspur were heard - but life was very inactive

21 June Morning spent finishing up samples and trying to close down the Berlesis - but no luck on the latter point. Weather was generally overcast, but there were patches of sunshine. A light wind was blowing from the north. In the afternoon, I went to the insect plots + took more samples. The evening spent in repairing tape records + in setting up new insect samples - which just arrived this evening.

22 June Barrow, Alaska

Spent all morning trying to set up the vacuum insect net + sorting pond samples. K. Tuvah finally got the motor started right after lunch + Bohusack and I went to the Peck ridge to try it out. At the time, we felt we were getting very little - but when the debris was put into a bag - numerous collembolids, mites, spiders, + small flies were found. - so this may be a very effective way of sampling surface insect populations. Weather today was cool + windy (NE). Evening spent sorting samples.

Holmes, R.
1961Journal23 June Barrow, Alaska

Morning spent working up insect samples. In the afternoon, Bohussek + I went out to his sampling plot and took samples with the new vacuum net. The net seems quite effective in picking up surface forms - but debris is also collected and a Berlese apparatus must be used in order to separate the materials. The sampling procedure used was to hold the net down for ~30 sec at each spot. Two such settings were taken on the top of a polygon - at random - & this was done on 5 polygons - for a total of 10 sq. ft sampled. This procedure was repeated in the troughs & on the slopes. The vacuum net will not work over water, since the water itself is also sucked up. The sweeping was done during the early afternoon - which will be used as a standard. In the evening, samples were sorted & the Berlese's were put into operation. The weather today was overcast, cold & windy (20-30 mph from the NE).

24 June Barrow, Alaska

Sullivan and I went to the area between Uroblachly & Oobysik

Holmes, R.
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Journal

16.

24 June Barrow, Alaska

Slough today, looking for sandpipers. 5 redlocks were collected - all that were seen during the entire morning (actually 1 other seen - missed in collecting). The stomachs were generally empty, but this may be due to the fact that we may have been flushing incubation birds - which had not been feeding for a long period of time.

The afternoon & evening was spent in cleaning up the last insect samples & calculating some of the data. Johnson left early in the afternoon. Weather today cloudy & windy - with the clouds moving away in the evening - so that it was sunny & windy (15-20 mph - NE).

A fox - Alopex - was seen near to Oolpik Slough - in almost summer pelage. Only a white area on the rump remained. The animal seemed to be hunting lemmings or bird nests.

25 June Barrow, Alaska

Censused Pitelka's Plot in the morning & went to the insect plots in the afternoon - where both sweep & povel samples were taken. The weather

Holmes, R.
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25 June Barrow, Alaska

Today was clear - with patches of fog + a wind of up to 20 mph.

26 June Barrow, Alaska

Spent all day in lab doing insect sorting. Weather - overcast with a light N. wind. Muel + Chamberlain went to Cairnright - Dave returned with the plane with the report that lemming sign was poor. In the evening I drove to Wohlsehly Slough - very few birds were seen.

27 June Barrow → Ikroavik, Alaska

Left lab at 0800 - arrived at Ikroavik at 0845. Very little seen on the way down - no redbacks. When I arrived here at the lake, I found an eskimo family camped between the plot & the lake shore - at stake 12. The kids were running around with slingshots, etc - so I believe the plot is finished for this summer. The census was extremely poor - very little was seen. The weather was overcast + a cold, stiff N. wind was blowing. It snowed at short intervals thru the day. I came back across the No. end of the lake, over the ridge into the lowland south of footprints. Here a banded

Holmes, R.
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Journal

18.

27 June Barrow - Ikroavik, Alaska

Red-back was collected. See sp. acc. & catalog.
The trip back from Footprint was made slowly - on a bony boggie. (Insect samples were taken at the lake today). The evening was spent working on samples. The shore ice went out during the late morning.

28 June

All morning spent working on samples & conferring with Max re Wales trip. We are now due to leave at 0900 tomorrow. In the afternoon, I went to the insect plot & sampled again - both pond & coast. The vacuum net. - a few adult fleas were seen on the pond, so emergence will be occurring from now on. All evening was spent in working up Ikroavik sample. The weather today was clear with a slight NE wind.

29 June

Barrow → Wales, Alaska

The morning was spent in preparing and waiting for the trip to Wales. After a conference with Max and Joe Felder, the pilot, we ate lunch & departed Barrow at 1215. Trip personnel - Felder, Sullivan, Lampe, & Holmes. Flew SW about 4 mi inland. At 1230 - we were at Skull Cliff (Sinian) - 2 Ad. Gulls seen & several flocks of Phalaropes. 1232 - seen 100 Phalaropes. 1250 - 4. Caribou. 1400 - 123 -

Holmes, R.
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Journal

19.

29 June Barrow → Wales, Alaska

Wainwright - due North. 1331 - 2 gull mounds later, 1
Pomarine Jaeger. 1335 - South of Point Lay - 12-15
Beluga along the shore between Point
Lay and Cape Beaufort (Lit A) - 1355. At this point
we encountered The Lisburne Hills & turned directly
inland - flying on a straight course past Mt.
Kelley to Kotzebue. On the NW slope of Mt. Kelly -
there were several 1000 caribou, feeding &
resting. 1445 - entered The Noatak Valley - Arctic
Terns, Glaucous Gulls, occas. Jaegers seen.
1500 - nearing Kotzebue, which is located on a thin
piece of land on the NW coast of the Baldwin
Peninsula. There is some tundra near the village,
but most of the area is grassy, beach-
like habitat. Near the airport, birds seen
included White-cr. Sparrows, Yellow Wagtail,
Western & Semi-palmated Sandpiper, Arctic
Terns, Glaucous Gulls & long-b. Jaeger.

At 1745, after having dinner at Rotman's
Cafe & after refueling, we flew south from Kotzebue
along the Baldwin Peninsula and then across
Eschscholtz Bay to Kivalik on the Seward
Peninsula. Occasional Gulls were seen along
the coast. 1830 - over Deering, a small
Esquimaux fishing & hunting village - flying
west directly to Wales. The ground
was polygonized in the area inland from

Holmes, R.
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20.

29 June Barrow → Wales, Alaska

Deering. Some small shrubby willows were seen in the stream beds - but only in localized patches. No sign of animal life seen. 1900 - moved into hilly country where the hills were capped with a volcanic(?) - like rock. 1 jaeger seen. The hill sides were patch-marked with runnels, probably formed by drainage pattern. There were patches of tussock tundra on the lower ridges. 1 Snow Owl seen.

19³⁵~~00~~ - crossing Mint River, just above the fork. The weather up to this point has been good. The anti slope was clear & sunny; the sky on the western edge of the Brooks was cloudy & foggy; Kotzebue was warm - with mosquitoes - slight overcast; the Seward Peninsula has had a patchy overcast, but now nearing Wales, a dark cloud is being approached. - in the vicinity of Cape Wm.

1945 - flying along the east shore of Lepp Lagoon. The Diomedes (probably big & little) & Jarvis Rock can be seen. 2000 - Arrived at Wales, met Tevick at the landing place (on the beach), he seemed extremely well versed on bird identification, knowing all the English names.

Walked up to the Naval Electronics Laboratory (Cape Prince of Wales Field

Holmes, R.
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Journal

21.

29 June Barrow - Wales, Alaska

Station for the U.S. Navy). A man (with wife + child) is stationed there, main duties seem to be weather reporting + maintenance. We are now quartered in the senior scientist's house - with wall-to-wall carpeting, easy chairs, etc. Food will be served to us by the family living here. The station here will only serve government people, particularly USN personnel, but since we have naval technician status, we are ok.

Leonard Peyton, a biologist from Arctic Health Lab at Anchorage, is also staying here - apparently to talk with Jenks re bird migration. After getting settled, Sullivan + I worked with him out to his snap traps - + then we set 20 traps to sample local microtine pop. A Red-back was seen, a snipe, 2 West. Edg., longspur, golden-cr. Sparrow, Yellow Wagtail. I even saw a fledgling longspur flying today. Peyton says Pacific Eider, Glaucous Gull + Arctic Tern nesting on the island, west of Long Lagoon to the North. Also a White Wagtail is nesting - an

Holmes, R.
1961

Journal.

22.

29 June Barrow → Wales, Alaska

old shack, 2 buildings so. of our quarters. By 2300, the fog had settled in & it was raining. Felder took off for home for refueling & Chester is staying with his brother-in-law, Jeruk - in the village.

30 June

Wales, Alaska

Arose, had breakfast with the NEL family, & took off for the field - checking traps on the way. Weather overcast & rainy, light wind from SE. Walked with Peyton & Sullivan across the flat behind the village & up the slope of Cape Mountain. Western Sandpipers were seen commonly in the flat lands, as were ~~philomenis~~ red-bocks, longspurs, ^{redpolls}, & yellow Wagtails. The Westerns continued up the mountain to the 1st bench, then pattered out. Snow buntings became more common in the rocky areas and then in the upland swales. philomenis was encountered, along with a few Westerns. Water pipits, Ravens, buntings & occas. Baird Sdp. were also seen. In the afternoon, Sullivan and I walked to Lapp Lagoon through the marshy tundra. Red-bocks & Westerns were the most common. One ♀ Pectoral was collected in a wet

Holmes, R.
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Journal

23

30 June Wales, Alaska

meadows near the reindeer corral. Long-b. Rowitchers were seen regularly, several gave the "mou-rii" + the 2 collected had brood patches. Two Westerns were banded (as I was this morning). Red-thr. Loons were seen on two ponds. Arctic Terns were found commonly near the coast (of the lagoon). We looped around and returned to the village at 1730 - soaked to the skin. Ideal clothes in this weather would be a long rain parka + high boots. The weather was not really cold, but just plenty wet.

In the evening, a short walk was made around the village area, traps were checked and field notes recorded (in writing + on tape).

The mammal sign here is mostly restricted to the village - beach ridge area where runways + holes are seen. The animals caught have been Microtus (oeconomus?).

Foxes are apparently common. No caribou are found on the peninsula. Reindeer were introduced + then died of hoof-rot. Spotted seals are killed commonly, as are Walrus, ogruk (Eryngathus), + polar bear. Whales are rarely taken, ^{even the} also we

Holmes, R.
1961

Journal

24.

30 June Wales, Alaska

Saw several spouting off shore. These are described by the natives as summer whales (presumably Calif. Grey whales).

1 July

Wales, Alaska → Kotzebue, Alaska

Sullivan & I re-climbed the mountain during the morning looking for phalaropes. He saw none but collected a baivdi.

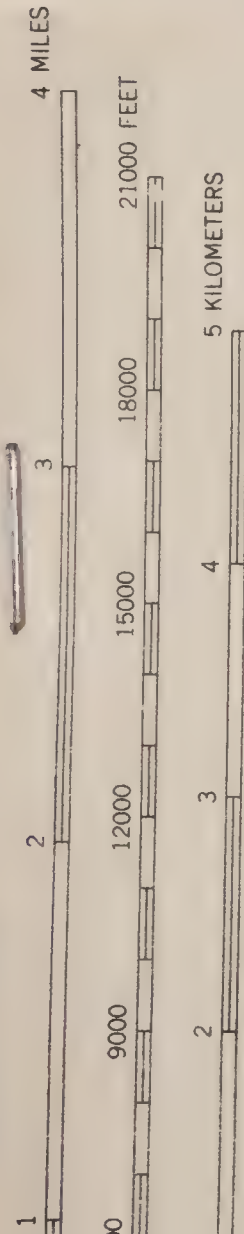
I saw 2 at the base of a rocky cliff where it meets a grassy bench - One bird (collected) gave a mouse-run. The other bird was seen sev. minutes later in the same area but could not be collected. A ♂ snow owl was seen about half way up village creek canyon & a ♀ was seen at the mouth of the canyon. A fox (red?) was seen in the upper parts of the canyon, 1 snipe was collected at the ~~south~~ mouth into the canyon. It was in this area that Tevuk collected the Rufous-necked Sandpipers several years ago.

One was taken in the grassy field at the east side of the canyon opening & one was taken on the more rocky hillside on the west side of the ravine. The nests were in 2 firs - in both cases, - in this drab habitat.

Holmes, R.
1961

Map of Wales, Alaska & Vicinity

SCALE 1:63360



CONTOUR INTERVAL 50 FEET

CONTOUR LINES REPRESENT 25-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

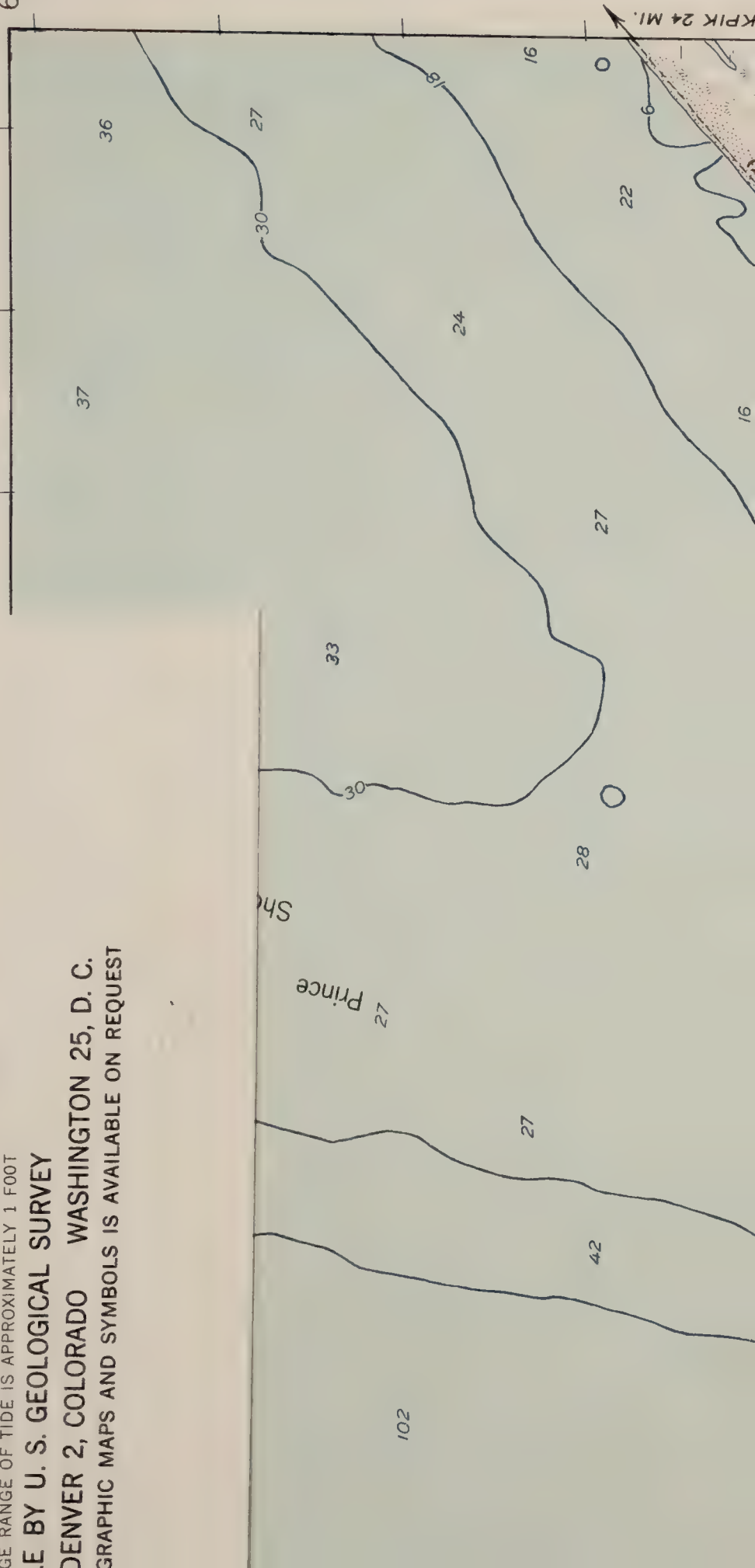
CONTINUOUS LINES IN FEET—DATUM IS MEAN LOWER LOW WATER
PRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
TIDE RANGE OF TIDE IS APPROXIMATELY 1 FOOT

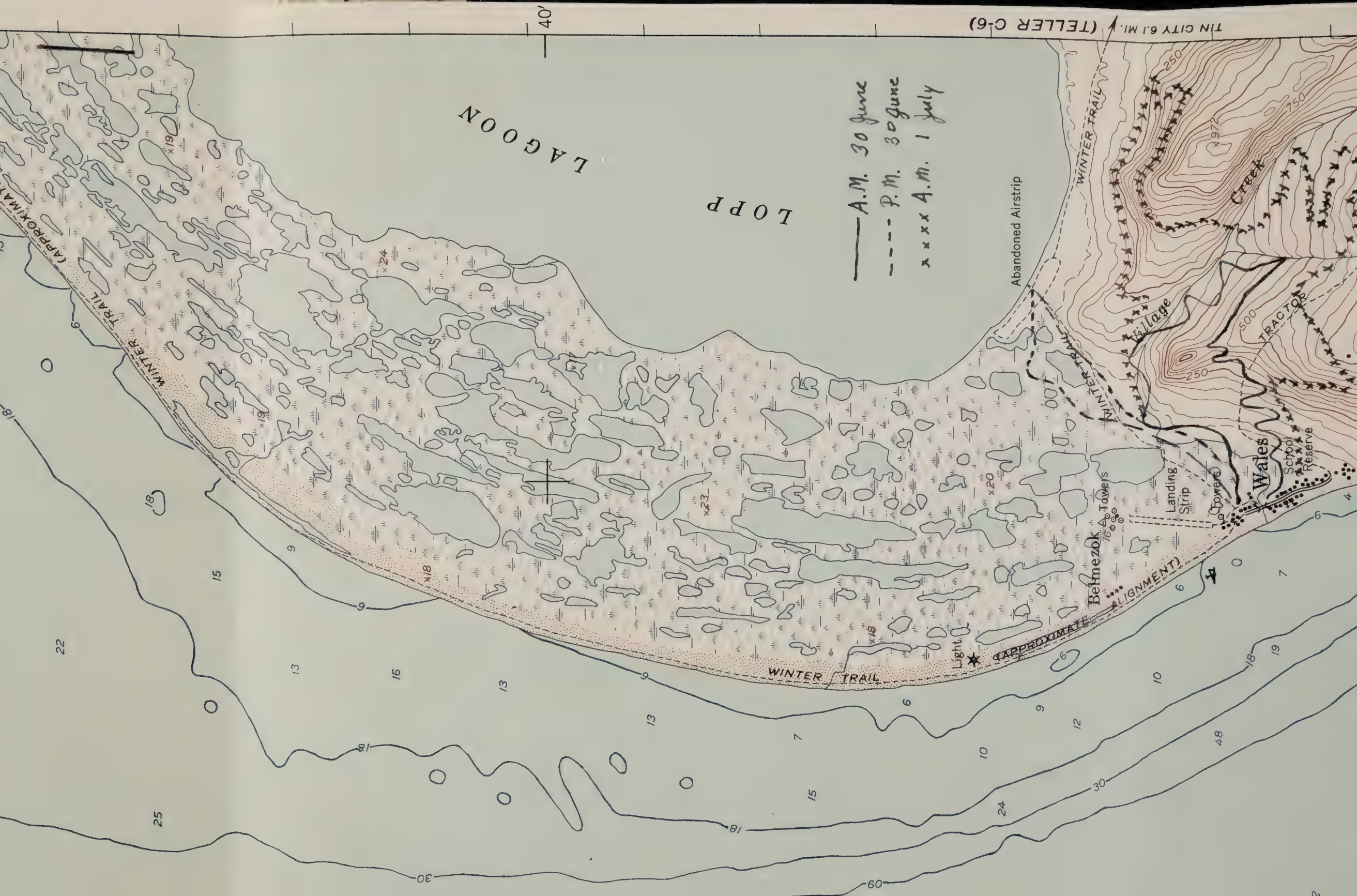
PREPARED BY U. S. GEOLOGICAL SURVEY

DENVER 2, COLORADO WASHINGTON 25, D. C.
TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TELLER (C-7) QUADRANGLE
ALASKA—SECOND JUDICIAL DIVISION
1:63360 SERIES (TOPOGRAPHIC)

168°00'
6E





Holmes, R.
1961

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1 July Wales, → Kotzebue, Alaska

A nest of mauri was located on the west slope of the 1st ridge, overlooking the valley. It was situated in a very mossy habitat where grasses were growing through the moss. The nest was among these grasses & was lined by dead grasses.

The 4 eggs were small & covered with small brownish-red spots. The incubating bird gave a typical distraction display with tail fanned completely, wings out & flapping, head down, shoulders hunched & a squeaking noise. She never came closer than 6'.

Northern Phalaropes and Red Phalaropes were seen commonly in the flat marshy tundra along pond edges.

Habitat Classification: The area near the beach is covered with a tall, ^{coarse} black grass. This area had redpolls, yellow wagtails, white wagtail (1 - with nest), ^{Golden-c. sp.} & of course the glaucous & Sabine gulls, ^{on} along the beach.

Behind the beach ridge, a mile-wide stretch of flat marshy tundra extended back to the base of the hill (slope of Cape Mountain). In this habitat, 10 eastern Sandpeeps were by far the most

Holmes, R
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1 July Walis → Kotzebue, Alaska
common bird. A few Semipalmated
Scaup were seen but these were almost
entirely close to the beach-area. Scaup
were seen here + 1 was heard winging.
This same type of country prevails to
the north along the south and west
side of Icy Lagoon, but here, there are
larger ponds + lakes. Red + Northern
Phalaropes seen about the same in
population numbers - both rather common.
(Red - not as abundant as at Barrow).
Long-billed Dowitcher were found in these
wet, pond-edge locations - as were
dunlin which were exceedingly common
(only surpassed by the Western Scaup in
abundance). Longspurs + Redpolls were
commonly seen. Red-thr. Loons, Old
squaw, + Arctic Tern were seen along
the lakes + lagoon. Parasitic Jaeger
(2) + Long-tailed Jaeger (10+) were
seen flying over the area - with no
signs of nesting seen. Apparently to the
north along the lagoon, Common Eiders
are nesting rather commonly - along
with Arctic Tern + Glaucous Gulls.
These are on the smaller islands
along the lagoon.

Holmes, R.
1961

27.

Journal

1 July Wales → Kotzebue, Alaska

From the base of the hill, a slope rises up at a 40° . The terrain changes into one of a "bumpy" nature - where the rocky ground is covered with a good layer of sod, grass + herbs. Erosion has resulted in making drainage troughs + channels thereby making the ground "rough + bumpy". The only birds seen in this area were Western Sandpeppers + Alaska Longspurs. Further up the slope, there is a bench - or a flat - shelf - where these same birds occur + where ptarmigan is first encountered.

In the areas above this shelf, the ground is rocky, lichen covered, with only occasional patches of grass or grassy swales. Patches of Ranunculus occur here + there as do phlox + other herbs. In this high region, snow buntings, water pipits, larks, + ptarmigan are found. Larks seems to be associated with the shaly-like areas on the E. side of the ridge. Ptarmigan is found where the rocky hillside where one often steps meet a patch of grass. If the swale is large enough, western

Holmes, R.
1961

Journal

28.

1 July Wales → Kotzebue, Alaska
Sandpiper are also found at these higher altitudes. A pair of ravens had a nest high on the rocky pinnacles. Longspurs - were omnipresent. Golden Plover also occurred here, but were not too common - only 2 or 3 pairs were seen (These seemed to have a different dialect from Barrow birds - some notes were similar, e.g. the wheedle, wheedle, notes, but the aerial call note differed in quality in that it was lower pitched).

In the lower part of village creek canyon (The 1st one east of Wales), Westerns were again encountered commonly. It was surprising to see small flocks of 5-6 birds all flying &/or feeding together. Occasionally, there appeared to be chorusing where 1 individual was giving a buzzy-call note. This gathering was seen quite commonly & may indicate the end of territoriality. (Williamson at Cape Thompson says the Westerns maintain exclusive territories & do not flock until after breeding is completed). In the stream bottom where the stream emerges from the canyon,

Holmes, R.
1961

29.

Journal

1 July Wales → Katzevue, Alaska

several Semi-palmated Plover were seen.

One was very excited as if it were nesting - so I believe she was. In the same area,

2 flocks of plover were observed. One of 4-5 Western; the other of 1-2 Western

+ 4-6 Red-back (two of which were collected + one which did an aerial display). Occas. other display of the

red back have been heard - more than that of any other sandpiper. One phrase

of the Western display was heard -

it consisted of a trill which dropped in pitch, then this repeated again. ^{oooooow oooooow}

The display of phalaropus was not

heard but a call note - tweede,

tweede...., repeated in rapid succession

was heard once. This reminded

me of the red-back, but on a lower

pitch.

One western sandpiper reacted to an individual landing next to him - by

cocking his tail + following after the

bird - as in the winter grounds at

Berkeley - this lasted only 1-2 seconds.

Young westerns were seen (collected +

banded) - as also was one

nest with 4 eggs.

Holmes, R.
1961

Journal

30.

1 July Wales → Kotzebue, Alaska

A downy-grown & distorted display was observed. This was typical of the Sandpiper. i. That tail was spread, & fanned, wings dropped & flapped; This was accompanied by a whining note.

The weather today was windy & rainy - again with constant rain all day. The temperature ranged in the high 40's & low 50's. In the afternoon, Sullivan & I flew with Jelder up the Munt River to take a look at this area. (A pair of Swans seen in a lake just east of the SE side of Lepp Lagoon) - saw Long-t. Jaeger, but little other signs of life - could not land due to high water in the river covering the gravel bars. Landing may be difficult regardless, because of short stretches of bars - but we could not determine this. From here we flew out to the outer shore and flew the islands so. to Wales. Arctic Terns, Glaucous Gulls, Sooty Gulls seen nesting. We stopped briefly on the middle island - saw several Red-bellied Common Eiders & 4 Sandhill Cranes. Along the ocean beach, murrelets, Puffins

Holmes, R.
1961

Journal

31.

1 July

Wales → Kotzebue, Alaska
Pacific Kittiwakes.

Before leaving Wales, we took a look at the nest of the White Wagtail which had been located by L. Plyton before our arrival. When 1st found there were 3 eggs, now there were 5 → all small with reddish-brown spots. The nest was in the 2nd-story (lattice) of a old shack - & was constructed of grass with a well shaped, deep cup. This is the first nesting record for North America.

We left Wales at 1630, headed north along the beach. Large flocks of immature (primary-molting) Glaucous Gulls, Arctic Terns, Sabine gulls & some eiders (common - some in eclipse - but still flying). 8 cranes were also seen in the marshy areas along the spit. Arrived Shishmaref at 1800. This is a relatively clean little village located on a beach-grass site, making it very "grazing" - comparable to Barrow. Left at 1830, flew up along the coast & then inland to Goodhope Bay & on to Deering. Just north of Shishmaref, a small island was

Holmes, R.
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1 July Wales → Kotzebue

lake examined behind the coastline - had 3-4 incubating Glaucous Gulls. At the point of turning inland (20 mi N. of Schumner), a lake about 2 mi inland had an island with 20-30 incubating gulls - is gull colony. The tundra in this area is still brown except at pond edges where this year's growth is showing through. Occas. flocks of Brant (Canada Geese?) seen - the large loon, sculp, Amer. Scotr, White-cr. Scotr, Ptarmigan, Old Squaw & Phalarope are seen. Arctic loons are quite common + 2 flocks of 4 each - Sandhill cranes?

The cliffs just west of Peering had many thousands of Murres (Puffin too?) - also at Cape Hermit. Landed at Peering at 1945. This is a small (100±) Eskimo fishing village - with a old school & apparently no white people at this time. Left Peering at 2010 after seeing Western Sandpiper, Arctic Tern, Glaucous Gulls, Redpoll, & A. Longsp. We then the same course back to Kotzebue - arrived there at 2100. Stayed at Rotman's Hotel, but were forced to eat

Holmes, R.
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Journal

1 July Wales → Kotzebue
hamburger at "Little Pete's Cafe" - The only
place in town that was open. The weather
had picked up since we left Wales,
so that we had a high overcast for
most of the trip with occasional
fog & rain squalls.

2 July Kotzebue → Barrow, Alaska
After breakfasting at Wien's tourist
hotel, we left Kotzebue at 1050 + heading
No. & W. toward Cape Thompson. 1110 - E
of Cape Krusenstern - 5 Raven, 1 herd of
100 Reindeer, 1 of 500+ Reindeer (goose
more splatly - than caribou). Arctic
Tern scattered along the beach &
Red-Thr & Arctic Loons seen on the salt
pools - occas. prs of Scaup. 1143 - over
Kivalina - saw 2 Yellow-bellied Loons,
& 1 Raven.

Arrived Cape Thompson at 1220,
checked with Williamson & Rapp
re local birds - (They had collected
adult, nest, & eggs of Red-Thr Pipit
this year). Their shorebird activity had
picked up with a large number of Western
Sigs. Red-bellies were still
scarce as were Pectorals, although
the latter did show some migration.

Holmes, R.
1961

Journal

2 July Kotzebue → Barrow, Alaska

We left Thompson ^{at 1340} ~~Frederick~~ north thru
The Lister Hills until we hit the
coast. (Weather rainy & fog). Then over
Cape Sabine & landed at Lii A - Cape
Beaufort for gas & coffee. Then
~~dro~~ directly to Barrow along the coast
where another herd of beluga was
seen near Point Lay & the usual gulls
& Terns were noted. No owls or jaegers
were seen between Wainwright & Barrow.
Arrived Barrow at 1845, A.S.T. (previous
times are on Bering Sea time). The
evening was spent in unpacking & readying
for the insect sampling to be done
in the morning.

3 July

Barrow, Alaska

Insect samples were processed all morning & field
notes were transcribed from tape into
writing. In the afternoon, sample 7 was
obtained from the probe & the vacuum-
samples were also obtained. Bird life
was almost nil. In the evening,
Mullen, Chamberlain & I sorted samples.

4 July

Barrow, Alaska

Went to Ritelka's Beak Plot & census.
No birds were heard displaying
on the plot. Several birds had

Holmes, R.
1961

Journal

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4 July Barrow, Alaska

been destroyed during the try to looses. There could have hatched, but doubtful. Parasites + Long + jaeger have been missing the area (altho none seen today). One set 1 RB egg was cold so no birds were seen. In the evening, samples were sorted. Weather today, sunny with NW breeze. In the afternoon, I went to the Insect Observation plot - where adult Crane flies, midges, etc are now seen. The emergence period has started during the last 4 days.

5 July

Barrow, Alaska

Stayed in all day + sorted insect samples. Weather alternate overcast + sun, relatively warm. Cade arrived in from Peters Lake in the evening.

6 July

Barrow, Alaska

Worked all morning on the samples. Between Sullivan, Chamberlain and I, we finished all samples by 1200. In the afternoon I went to Central Marsh + vicinity. Weather overcast + cold W. wind blowing. The ice is back now - due to this wind. Fresh lagoon still has 40% ice - cover.



Holmes, R.
1961

Journal

36.

7 July Barrow, Alaska

Went to Ikroavik & censused the plot. Only 3 RB & 1 RP were seen in the plot. No displays were heard anywhere. One flock of 3 RB were seen feeding together ^{East} of the plot. 2 Parasitic jays were flying - hunting near the north end of the lake. Weather overcast, cold & strong W. wind. In the afternoon, I took insect sample #8 at the insect plot near Barrow. Weather was alternating sunny, overcast, sleet, with cold W. wind.

8 July Barrow, Alaska

Entire day spent in doing insect samples. Sullivan & Piper left for Pitt Point in the morning. Rex returned at 2 a.m. Weather overcast with some sun - light westerly breeze.

9 July Barrow, Alaska

Censused bear ridge plot in the morning. Bird life was very poor - 2 RB heard displaying, 2 pairs seen along North bear ridge (with nests) - 2 Bairds seen in plot, 1 Plover seen south of Wohl. Slough at nest, 2 Parasitic jays seen near " ", 2 ♂ P.S. 2 ♂ Red Phalaropes seen near A.H. & Camp ^{FWL & SB.} - This is all the bird life - pathetic! Left census - drove to Eise & Wohlshole

Holmes, R.
1961

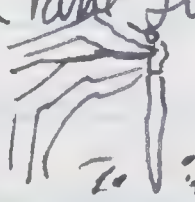
Journal

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9 July Barrow, Alaska

and birds seen on this trip are included above. In the afternoon I went to Voth's Hut + Hough - where a flock of 2-t. Jayans + 3 small flocks of chukars were encountered. Weather today was bright and sunny - with light easterly breeze which began to increase during the day.

10 July Barrow, Alaska

Morning spent in finishing sod + pond exper. samples from last Friday - due for another set tomorrow. In the afternoon - went to insect plots to experiment with the vacuum sampler. It was found that the sq. ft. sampler will not pick up adult *Epilias* - so I will have to try a smaller head to get better suction. Today was extremely hot - to 65°F or so + no wind was blown until 1430. Mosquitoes were out in full force + made field work very uncomfortable. Crane flies, midges + numerous mosquitoes were found everywhere, but especially around the ponds. ♀? Crane flies were seen "standing" on their abdomen  - possibly laying eggs?

Birds were generally scarce - again a small flock of auklets + long-t. jays seen NW of Voth's area.

Holmes, R.
1961

Journal

11 July Barrow, Alaska

Went to the insect plot in the morning, measured and mapped the ponds in the lowland & took samples from all ponds. In the afternoon, I returned & took vacuum & observation samples. - The smaller beaver on the vacuum net seemed to work much better - since crane flies were seen - to be picked up and also more debris was collected. Weather today was warm (high 50's) & sunny. Mosquitoes were out in the morning - since there was only a very light westerly wind. In the afternoon - by 1330, the wind had increased to 10 mph - so the insects were less troublesome.

12 July Barrow, Alaska

Insect samples were completed by evening. Electricity installed the new fluorescent lights in the lab. Weather was overcast cool - 35° & windy. It drizzled all during the day, but the clouds lifted by early evening.

13 July Barrow, Alaska

Weather sunny with a cool, 10-15 mph wind from the N.W. In the morning - I went to Oshpik & Wahlshlog Slough, B.R. & Central Marsh. Several flocks of birds were seen - RB's, Golden Plovers - no Pularose - geese & swans however.

Holmes, R.
1961

Journal

29.

13 July Barrow, Alaska

In the afternoon, I went to Voth's Area + Footprint Lake. Little bird activity was seen except 50-60 Glaucous Gulls feeding on some old caribou-kills - which insects were now abundant. Several L-t + Parasitic jaeger were also seen. A fox was reported by Eskimo folk - near Wohlschlag - yesterday.

14 July Barrow, Alaska

Worked on data in the morning and went out to Voth's Area + the insect plots during the afternoon. Weather was partly sunny - overcast with a cool SE wind.

15 July Barrow, Alaska

Specimens were prepared + notes written during the morning. In the afternoon, I went to the insect plots - took pond + insect samples, but no vacuum samples. The weather was cold - 35° - with rain + a light, cool westerly breeze of 5-10 m.p.h. It rained steadily all day, but let up to a light drizzle in the evening. Sullivan arrived back from Pitt Point - 3 Lemmings seen. Evening spent sorting insects.

Holmes, R.
1964

Journal

16 July Barrow, Alaska

Insect samples were processed during the morning and then in the afternoon, vacuum + observation data were obtained at the insect plots. Weather was mostly overcast today with patches of low fog.

17 July Barrow \leftrightarrow Cape Beaufort, Alaska

Left lab at 0830. Left airport at 1030 with Hulten, Sullivan, + Fischer. Flew west to Cape Beaufort, hit a cloud bank, turned around and headed back to Barrow after landing on a lake briefly to refuel. A pair of swans was seen S + W of Wainwright. 1 Parasitic jay was seen; no other jays were in evidence. 1 Snowy owl was noted near Skull Cliff - 2 mi inland. A herd of 100+ caribou was seen about half way between Wainwright + Ig A (Cape Beaufort). Arrived back at Barrow at 1500. Insect samples were picked during the afternoon + evening. Weather at Barrow - overcast + cool.

18 July Barrow, Alaska

Finished samples in the morning + worked - data. In the afternoon, a special horizontal sample was taken on Pond C - to see the amount of variation in one pond. Weather

Holmes, R.
1961

Journal

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18 July Barrow, Alaska

was overcast + cool. Rain fell during most of the day.

19 July Barrow, Alaska

Sullivan + I went to the area between Wohlsehlog + Ookpik Slough where a number of RBs were collected. One Turnstone + 2 Chicks were seen, as well as 2 Parasitic jaegers. Longspurs were scarce, only occasional indiv. seen. No pectorals seen, a few ♂ phalaropes, + no others. Pitelka arrived at 1115. I went to the insect plots at 1330, took samples. The weather was cool - 40-45°F + a light 5 mph wind was blowing from the E. Observation samples were also taken. In the evening, a reception was held for Werner Von Braun.

20 July Barrow, Alaska

Spent all day in the lab, processing specimens + working on the insect samples. Weather today cold (35°), windy 15 mph - E. - rainy.

21 July Barrow, Alaska

Insect samples + bird specimens were processed all morning, with the aid of Sullivan + Pitelka. In the afternoon I went to Uoah Area + Footprint Lake. Weather in the early morning was cold (32°) - + snowing - snow stayed on

Holmes, R.
1961

Journal

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21 July Barrow, Alaska

The ground until late morning. In the afternoon a cold W. wind was blowing. Fog was present in the evening when Pitelka & I drove to the No. end of Footprint Lake - to look for a large shrub which F.A.P. saw from the plane earlier in the day.

22 July Barrow, Alaska

Spent morning doing samples & other lab work. In the afternoon, went with Pitelka to my insect plot & took a vacuum sample. Weather was pleasant - 45-50 - very light (< 5 mph) westerly wind, overcast but with a high ceiling. Two Golden Plovers were heard, 1 ♂ Phalarope seen, 2 Laryngus (Tad) were present & this was all that was seen. Returned to the lab by 1600. Frank flew to Arlis, & I processed samples & wrote a letter.

23 July Barrow, Alaska

Worked on specimens & finished the last insect sample in the morning. Took observation plot sample & pond sample during the afternoon. Drove to So. side of Wohl. - Elsa - So. W to oolaguk & up the west side of central marsh. Little dead arctic ^{see 2nd A}



Holmes, R.
1961

Journal

23.

23 July Barrow, Alaska

Weather clear & sunny. 50°F+ - with a very slight westerly wind. During the afternoon a few clouds came in but it cleared by late afternoon. Mosquitoes were abundant but relatively little other insect life was noted - & no crane flies & life around the ponds was not exceptionally active.

Birdlife on trip to Ookpik - 6 RB, 1 GP, 1 Longspur - no Phal. or Pectorals. - 1 Parasitic Jaeger, 6 Gla Squaws. Big Flock of Eiders - mostly Kings - were flying N. along the edge of EIS m.

24 July Barrow, Alaska

Weather overcast during the morning with a warm southerly breeze. In the afternoon, a rain squall passed through ~~passed~~ & was followed by a steady drizzle that lasted into the evening. In the afternoon, Pitelka & I went out to the beach ridge & restaked his old BR plot. The mosquitoes were out in force & this in combination with the warm muggy rain made the afternoon rather uncomfortable. 1 ♂ + 2 chicks RD were seen & coll. - in the marsh, just no. of the O line of the plot. A flock of 4 GP were in the plot - no Longspurs, or other birds seen.

Holmes, R.
1961

Journal

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25 July Barrow, Alaska

Stayed in lab all day + worked up insect samples + bird specimens. Weather overcast + windy. Sullivan returned from Cape Smyth.

26 July Barrow, Alaska

Went to Ikroavik during the morning saw very little in the way of bird life - 2 Hoots / RB Ads - one / H, one / B, 14 + 1 chick Pectoral, 3 BP-oxides, 2 Parasitic jaegers. The plot activity was poor - no birds seen. The eskimo camp was deserted. Weather was sunny with a light SE breeze. In the afternoon, specimens were processed + we talked with Dr. Brian Kessel from the Univ. of Alaska. A special seminar by Muller + Schultz was conducted in the evening.

27 July Barrow, Alaska

Nature + specimens were processed during the morning. At 1100, I went to the insect plots + took the pond samples. In the afternoon, I returned to make the observation plot + the vacuum operation. The weather was windy (15-25 mph) from the SE. The sun was out until 1400 - when it became overcast + quite cold. Notes + letters were written in the evening.

Holmes, R.
1961

Journal

45.

28 July Barrow, Alaska → Gull Lake, Alaska

Processed insect samples until call came for trip to Gull Lake at 1030.

Dr Eric Hultén, Sullivan, & I left with Zimmerman aboard the float plane & headed west. Sev. Arct. & Red-Thr. loons were seen between here & Sinaam. At Sinaam - 1 ♀ Snowy owl was seen. At Peard Bay, we left the vicinity of the coast & passed Wainwright about 6-8 mi So. of the site. At 1240, 1 Sn. owl was seen. (E of Lir B) & the 1 was seen So. of Lir B. The weather had been foggy & wet, but once past the Kusk River, it cleared, leaving a few scattered clouds. We arrived at Gull Lake (see notes from last yr & large mag. of Arct. slope - in early notes of this year). The lake is located at one of the forks of the Iperwik River - inland from Cape Lybourne. When we 1st arrived, about 50 gulls were scattered over the island, spaced about 10 feet apart. The chicks were large, with down heads & partly feathered bodies & wings. 27 chicks were counted in the surrounding waters (4 of which were banded). On the island, there were 23 active

Holmes, R.
1961

Journal

42.

28 July

Barrow - Gull Lake to Barrow, Alaska
nests - which had been used this year.
A total of 60-70 ads (64 counted at 1 time),
were present & as we left the island, they
again spread themselves out. but
not necessarily at the depressions where
the nests had been.

While on the island, the debris was
picked up. It was difficult to determine
how much of this was new & how
much was old, so the account for this
year may be poor, we are attributing
the bones to this year's food supply.
The island measurements & # of old nests
were taken last year. There appeared to be
no new nests this year.

Left the lake at 1730. Saw 3 Snow
Owls, just w. of the skull cliff tower -
(2 ♂♂, 1 ♀). Arrived Barrow at 1930.

2 Gray Whales seen between
Point Lay & Cape Beaufort. 1 Ice Gnome
Bear seen standing on the beach
between Cape Beaufort & Cape Sabine.
Hockey juv + ♂ No. Phalarope (50+) &
20± juv Western Edys - were seen on
island.

Holmes, R
1961

Journal

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29 July Barrow, Alaska

Spent day in lab finishing up insect samples. Weather pleasant, warm in morning with overcast. Light wind in evening.

30 July Barrow, Alaska

Bright sun + warm morning, so I went to B.R., Wohl. Slough, + area. So of W. Sl. - Saw very few birds. - only a few longspurs. Bairds + Tow. S-p. nest there later. Drove out to the ponds No. 1 Birch in the late morning + spent all afternoon working on specimens + a list for Science Conference.

Clouds came in during the afternoon - along with a light SE breeze.

Rain started to fall by 1700 + then continued falling lightly to moderate during the rest of the evening. (Mosquitoes were out in the morning).

31 July Barrow, Alaska

Bird specimens were prepared during the morning + then at 1030, I went to the insect plots + took pond samples. The weather has continued poor, with heavy rain occurring during the early morning hours + strong winds of

Holmes, P.
1961

Journal

31 July Barrow, Alaska

20-30 mph with gusts to 35-40.

Rain continued all morning and by the time the samples were taken, the ponds had all filled to a level nearly equal with the melt-off period level.

Also many ponds that have dried out in the past, as well as troughs + men depressions, are all filled with water + the tundra is quite well saturated, making walking difficult.

During the afternoon, the samples were processed, + bird specimens prepared.

The rain subsided to a wind-blown drizzle during the evening.

1 Aug Barrow, Alaska

Morning spent in finishing up insect samples + during the afternoon + evening, we discussed plans with Pitelka, who is leaving tomorrow.

Rain continued off + on during the day + a wind with gusts to 30 mph blew during the day but subsided during the evening.

2 Aug Barrow, Alaska

Today was bright + clear, yet crisp + "fresh." A light wind blew from the West; some fog came in during the afternoon. Worked on specimens in the lab + then saw Frank off to the airport during

Holmes, R.
1961

Journal

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2 Aug Barrow, Alaska

In the late morning. Sullivan & I went to the insect plots in the afternoon & took obs. & vacuum samples. In the evening, the sun was shining & so I went to the boardwalk. Little life is seen in the tundra these days, an oval. longspur or sometimes a shorebird.

3 Aug Barrow, Alaska

Processed specimens & worked on data all day. Drove with Sullivan to Nauyasuk - where a flock of ~15 RB were found, sev. 100 Red Phalaropes, Arctic Terns, Sabine & Glaucous Gulls & a few Snow Buntings. Weather today was overcast & cool - with a 5-10 mph E. wind.

4 Aug Barrow, Alaska

Weather - rainy & misty all morning & the overcast & windy (10 mph) all afternoon. Processed birds in morning & went to insect plots & took pond samples during the afternoon. The pond levels were back to the level of 12 June. Juv. Pectoral Sdp were seen feeding around the plot-area.

5 Aug Barrow, Alaska

Processed insect samples during the day & then birds were finished. Weather

Holmes, R.
1961

Journal

5 Aug Barrow, Alaska

cold and nasty with 10 mph westerly wind.

6 Aug Barrow, Alaska

Stayed in today and worked on white-rump paper + other data. Weather - overcast, cool + light E breeze blowing.

7 Aug Barrow, Alaska

Drove through Central marsh, across workshed to oil pit + located a spot for the census plot which will be established before the end of the summer. Birds were collected along the way and only a few were seen. Weather was overcast + cold. Wind was 15-20 mph from the east. In the afternoon, specimens were processed.

8 Aug Barrow, Alaska

Specimens were processed during the morning + some work was accomplished in doing molt. In the afternoon, pond samples were collected. The weather today was cold, windy, + foggy. In fact, the fog held out all through the day (Hewer never landed).

9 Aug Worked on samples all morning - went to insect plots for obser. counts + vacuum sample - The latter

Holmes, R.
1961

Journal

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9 Aug Barrow, Alaska
was not taken because of
broken-gas tank on motor. Weather
overcast + cool with light wind -
see obs. plot - record.

10 Aug Barrow, Alaska
Day spent in finishing samples +
working on paper for Science Conference.
- Weather cold - windy - overcast +
foggy.

11 Aug Barrow, Alaska
Drove to the oak pile census plot +
laid out the base line today.
Longspurs, occ. RD + 1 Pectoral
were seen in the area. Other birds
(1 juv RB, 30-40 Pectoral, Bl-bellied +
Golden Plover) - were in the marsh.
Weather was high overcast, light
rain, + light E. wind. Rain stopped
by 12:00. Afternoon spent in pouring
birds + catching up on book work.

12 Aug Barrow, Alaska
Drove west toward insect plots - broke
track on #366, walked back - went out
again + took pond samples. Remainder
of day spent in working on samples.
Weather clear in the morning - but
cloudy in the afternoon + foggy by evening.

Holmes, R.
1961

Journal

52.

12 Aug Barrow, Alaska

Little bird life was seen - 2 Pectoral + 1 Red-b. Sandpiper, 2 imm. phalaropes.

13 Aug Barrow, Alaska

Caught up on lab work during the morning - then went to the insect plots + took vacuum samples + observation counts.

Little insect activity was noted. - heard 1 or 2 RB's, + sev. Pectoral + phalaropes during the stay there - as well as 10-20 longspurs.

Drove to Footprint - saw only 1 shorebird - as it flew off, but found an immature

Cyrt Falcon in a fox trap. The bird was still alive, but his leg was nearly pinched off. He was brought back to the lab.

Weather today was generally pleasant. There was a high overcast with a very light (1-5 mph) wind.

During the mid-afternoon - the sun came through for awhile but then became clouded over again.

14 Aug Barrow, Alaska

Sullivan and I checked traps in the morning and then drove to Ookpik + began to set out the plot, but due to too short a rope for measuring length, we returned early. One small flock of RB (5 Ads, 1 Imm) - on the south side of gasline ridge - several Imm

Holmes, R.
1961

Journal

53.

14 Aug

Barrow, Alaska

pectorals in central marsh, 4 Imm plovers
so. / gasline, + occas. longspurs.

In the afternoon, we went to the
village + made reservations for departure.
The weather today was overcast
in the morning but the air was still.
Several mosquitoes were seen. In the
afternoon the sun was shining for
a while, but it clouded over in
the evening. There was only a slight
wind from the W.

15 Aug

Barrow, Alaska

Stayed in + did lab work all morning.
In the afternoon - went to Footprint lake +
coll. sev. red-backs (3 Ad. / lake, 1 Juven. &
end with flock / 60 Redvithers). 2 Pectorals
seen. 1 Ad. / lake, 1 Juven. Phalarope - lake.
No other bird activity. Weather rain-overcast.
5-10 mph W.

16 Aug

Barrow, Alaska

Took samples (pond) from insect plots +
spent the remainder of the day,
finishing these up. Weather rainy -
overcast with 10-15 mph wind (E).

17 Aug

Barrow, Alaska

Chamberlain + I went to the ookpik
census plot + worked all morning.
Returned for lunch + then spent the

Holmes, R.
1961

Journal

54.

17 Aug Barrow, Alaska
rest of the day, finishing insect samples & working on the white-rump paper. Weather overcast in morning, clearing in evening for awhile. At 2130, Muller & I drove to the fertilizer plots to check traps.

18 Aug Barrow, Alaska
Chamberlain & I again went to the plot. Weather - West wind 10-12 mph - bringing fog in by 1000. - then lifted again after 1200, but still hanging around. Afternoon spent in writing field notes & working on specimens.

19 Aug Barrow, Alaska
Spent all day in lab work on specimens, white-rump paper, & insect samples & data. Weather - heavy rain during early morning & continuing thru noon. In the afternoon, it was overcast with a cool east wind.

20 Aug Barrow, Alaska
Drove to insect plots & took pond sample #19. Weather cold - 35° (or colder!) wind 15 mph from SE - overcast. a flock of 15 juv. Phalaropes in near Pond F - & 2 Glaucous Gulls. There was also the bird life. Stayed

Holmes, R.
1961

Journal

20 Aug Barrow, Alaska
in the lab for the remainder of the day working on samples.

21 Aug Barrow, Alaska

Rain began falling last night & continued through the morning but subsided by noon. Weather

windy (16 mph - SE) & cold - 35-40°.

Worked in the lab on pond samples all morning. Went to plots & took

vacuum sample & brief observation

counts - ever though everything was soaked. In reference to this,

the amount of rain this last 2 weeks is phenomenal - more

than '55 ~ '60. The tundra

is now saturated & there is

standing water everywhere. The

ponds at the insect plots are

a foot or two above sample #1

of 12 June. Many of them have

flooded over onto the surrounding

flat lands so there are now

large expanses of wet, soggy tundra.

With the permafrost table being

down to 12-15" & the tundra

saturated, travel is difficult -

sure you work - permafrost.

Holmes, R.
1961

Journal

21 ~~July~~
Aug

Barrow, Alaska

There are very few birds on the tundra.
1 juv. Phalarope seen today - was all.

Received a package from Robert Page
at T-3. - with a emaciated ♂
pied-billed sandpiper (#1301) - Apparent
was picked up on 5 July -
near one of their trailers - This was
70 miles N. of Barrow.

Also a point should be mentioned
concerning the concentrated collection
between the VOR Pond + the
edge of Family Lagoon + or VOR
Creek - all birds removed
(just about) - & no new ones
moved in! - all no replacement.
- most by this again next yr.

22 ~~July~~
Aug

Barrow, Alaska

Morning spent in processing preserved
stomachs + packing specimens. In the
afternoon, I drove to the point to
check ponds for birds - 2 juv. RB's +
several hundred juv + Ad. ♂
R. Phalarope were seen. The
weather today has been cold, snowy,
rainy + very windy - to 20-30 mph.

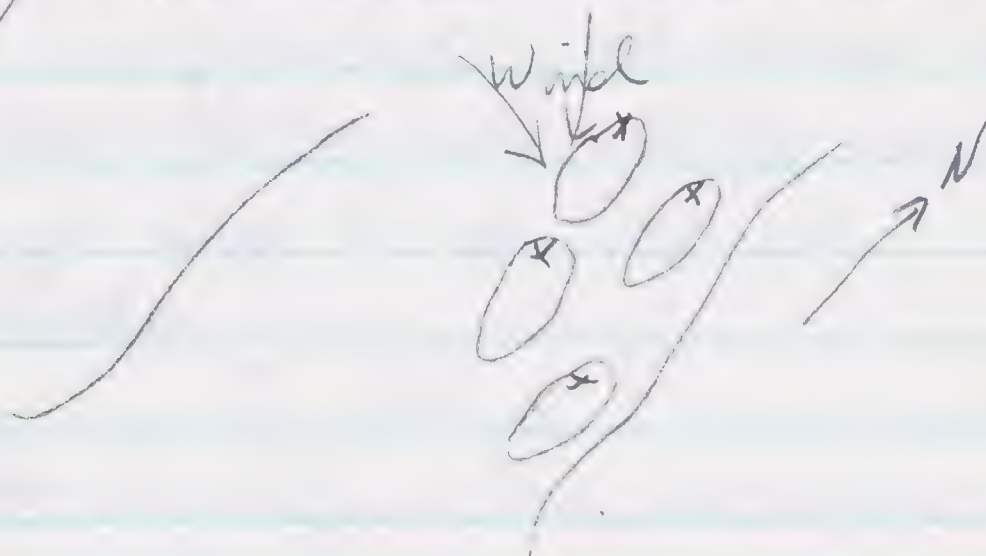
Holmes, R.
1961

Journal

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22 Aug Barrow, Alaska

The wind was from the N or NNW & forced the phalaropes & 2 peregrines to feed at the NW corner of the ponds. It was found that at each pond there was a small cluster of birds feeding & sitting in the tank - at the NW side.



23 Aug Barrow - Inuvik, Alaska

Worked all morning - lot packing boxes, working on data, etc. Drove to Control Marsh & then to Ik, savik. - saw 2 pectoral-gills in the marsh & 5-6 juv. Golden Plover near gasoline ridge. - no longspurs. Weather again cold - water frozen in early morning - intermittent snow flurries & rain - gusty wind to 25 mph. At 1615, Muller & I left with Bobbie Ziesche in the float.

Holmes, R.
1961

Journal

23 Aug Barrow - Inarn, Alaska
plane for a trip to The Inarn, where
Bobbie had just taken Chamberlain &
Rob Robertson. Weather was cloudy &
snowy all the way. The traps
look good. The ground is more
fussier than I had supposed.
Several flocks of Brant seen on the
way - no flock of shorebird seen.
Snow began falling in the evening & was
piling up along the road-ruts.

24 Aug Barrow, Alaska

$\frac{1}{2}$ " snow on the ground this morning and
all ponds were frozen this morning with
 $\frac{1}{8}$ " of ice. Pond samples were taken
during the late morning & then were processed
in the afternoon. Wind 10-15 mph - with
occasional snow flurries. Most snow
was gone by 1400 but it started
snowing again at 1830. Sullivan
returned from Paw A - (1 Ju.
Phalarope seen near the upland ponds.

25 Aug Barrow, Alaska

Stayed in & packed specimens all
morning - drove with Sullivan to
Voth's Slough to help him put
in 3 enclosures. Weather cold
(30°) - cold NE or E wind (10-20 mph) - with

Holmes, R.
1961

Journal

25^{Aug} ~~July~~ Barrow, Alaska

Frequent snow flurries. All ponds were frozen or at least partly frozen. Sev. Glaucous gulls seen - no other birds. Muller gave his seminar in the evening.

26 Aug Barrow, Alaska

Morning spent - packing + checking specimens + then after having coffee - Sullivan + I went to AACB, the beach ridge (near Trophus 5+6). No birds seen - except 2 Buntings - where the gasoline crosses the ridge. In the afternoon, walked out to AACB - to obtain Buntings + Longspurs (saw 4 Buntings, 1 Longspur) The Longspur was coll. - the buntings were too wary.

27 Aug Barrow, Alaska

Morning spent in packing. In the afternoon, Muller + I went to the water pit census plot + finished staking the 60 acre plot. Weather was cold + windy (15-20 mph). Evening spent in packing - let Falco go today - flew away with no problems.

28 Aug Barrow, Alaska

Drove to the insect plot - took pond temp. + level data. Weather warm + cool. Waited for plane until 1900 - females departed - arrived Fairbanks 2230.

Holmes, R.
1961

Journal

60.

29 Aug Fairbanks, Alaska

- Presented paper at science conference
at the University - left 30 Aug - for
Seattle. Arrived LA - 2055.

Note - This summer there was a general
paucity of wing flashing displays between
pairs or indiv. - in all species. RD
were seen to land, maintaining their
wing sat the gliding angle, ran for a
few steps then fold wings in
place, but other no flashing, per se
was noted - incl. Bairdi, alpine,
pusillus —

R. Holmes
1959-61

Alaska

Journal

1961 Insect sampling, plots

Holmes, R.
1961

Insect Sampling - Ikroavik

13 June Ikroavik, Alaska

Sod samples were taken as before & are described briefly with the obser.-plots. -

Pond Samples. Again 5 random ponds & 5 lowland ponds were picked.

Pond I-A. 40x20', deep, edge covered with grass and sedge. Pfr at 2". Temp 8.8°C

Pond I-B - 50x40' - deep, covered by 70% ice, - mossy edge - Temp 8°C. Pfr = 2"

Pond I-C. 100x100' - mud bottom, except for edge which is mossy-sedge. Temp = 9.5°C. - 80% ice Pfr at 4"

Pond I-D. (Iwanigan pond) - 300x100' - sedge covered. 9.6°C - Pfr = 3"

Pond I-E (at stake 0.4) - 40x50'. Sedge - mud - shallow. Temp at 11.8°C, Pfr = 3"

Pond I-F. (NE. of Iwanigan) - 100x40' - deep with grass & moss edge. Temp at 8°C. Pfr at 3".

Holmes, R.
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Insect Sampling - Ikroavik

13 June Ikroavik, Alaska

Pond I - G. deep with grass + moss
covering. - $70 \times 50'$. Pbr at 3". Temp = 9°C

Pond I - H. $80 \times 40'$, silt bottom with
sedge edge. Temp 8°C Pbr = 3".

Pond I - I. $40 \times 50'$. deep with silt
bottom but sedge edge. Pbr at 3".
Temp = 7.4°C

Pond I - J - $100 \times 60'$. - grassy + mossy (no
silt) - Pbr at 3+'' - Temp = 5.6°C

Holmes, R.
1961

Insect Observation Plots - Ikroavik

13 June Ikroavik, Alaska (located west of wanigan)

Obs-Plot - I-A (OPIA) - Polygon top, covered
with moss, grass, sedge, & some Salix 1528-1530 -
none

O.P.I.-B - located in wet trough in ridge area.
sedge and grass covered, 1530-1540
- 2 spiders

O.P.I.-C - slope locale with green sedge
cover. 1555-1605
- 2 spiders

O.P.I.-D dry mossy area near pond edge.
Some sedge & green present.
1610-1620 - 1 spider

THE ANTHROPOLOGY OF THE
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Holmes, R.
1961

Berlese - Results on Material
from Vacuum Insect sampler.

23 June Barrow, Alaska

¹Polygon Top: 2 sq. ft. samples taken at random from
the top of 5 polygons - near the top of the ridge.
The sampler was held in place for 30 sec.
• Sample is \therefore from 10 sq. ft.

²Trough: 2 sq. ft. taken in trough in 5 different
troughs - over ~ 60'. Again 10 sq. ft.
is the net amt. sampled.

³Slope: - 10 sq. ft. sample taken - same way
as above - slope near S-C area.

Berlese #1 (B-#1) = Polygon Top
#2 - Trough
#3 - Slope

25 June Same areas sampled again - with addition
⁴Lowland - sample taken near S-D - on dwarf moss,
areas near lowland ponds. - Same procedure.

B-#4 - Slope
5 - Lowlands
6 - polygon top
7 - trough.

The samples were not worked over
water, since the water was also
taken up.

Holmes, R.
1961

Berlese Samples - Vacuum

28 June Barrow, Alaska -

10 sq. ft taken at each location - random
chosen

B-8 - ~~Slope~~ lowland

B-9 - slope

B-10 - trough

B-11 - top

3 July Barrow, Alaska

Same procedure as before.

B-12 - lowland

B-13 - slope

B-14 - trough

B-15 - top

B-16 - sweep along ponds in lowlands -
water edge - perhaps - 4'
Sweep

7 July Barrow, Alaska

10 sq. ft. sample - same areas

B-17 - lowland

18 - slope

19 - trough

20 - top

21 - sweep along pond A - on ridges

Holmes, R.
1961

Berlese Samples - Vacuum

3.

11 July Barrow, Alaska

20 samples with $\frac{1}{2}$ sq. ft sampling head - at each site

B-22 - Flatland

-23 Slope

24 Trough

25 Top

26 ~30 ft sweep around ponds A+B - with $\frac{1}{2}$ sq. ft. head

27 ~30 " " " polygon top " "

15 July Barrow, Alaska

30 samples with $\frac{1}{3}$ sq. ft sampling head at each site

B-28 - Flat

29 - Slope

30 - Trough

31 - Top

- 30' sweep - about 1 min in duration.

32 - 30' sweep on Flat - with $\frac{1}{3}$ sq ft head

33 " " " Slope

34 " " " Trough

35 " " " Top

22 July Barrow, Alaska

Take same as 15 July

B-36 - Flat - 30 samples, - $\frac{1}{3}$ ft² head

37 - Slope

38 - Trough

39 - Top



Holmes, D.
1961

Berlese - vacuum samples

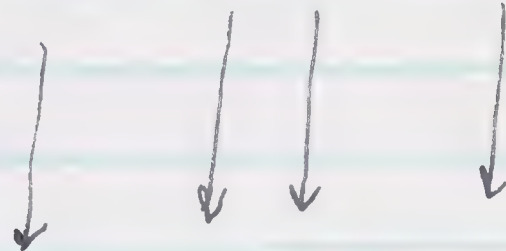
22 July Barrow, Alaska

B-40 - Flat - sweep - for 30' - 1 min

41 Slope

42 Trough

43 Top



27 July Barrow, Alaska

44 Flat - 30 - $\frac{1}{3}$ sq ft. sampler

45 Sl

46 Tr

47 Top

2 Aug Barrow, Alaska

48 F

49 Sl

50 Tr

51 Top (+ 1 dipt - flew off)

Sweeps as before

52 - Flatlands

53 - Slope

54 - Trough

55 - Top

13 Aug Barrow, Alaska

56 - Flat settings

57 - Slope

58 - Trough

59 - Top

60 - Flat - 30' sweeps as before.

61 - Slope

62 - Trough

63 - Top

These 4 were left in bags for
24 hrs before being put in
Berlese - may have dried out

Holmes, R.
1964

Berlese - Vacuum Samples

21 Aug Barrow, Alaska

B-64 - lowland

65 - slope

66 - trough

67 - top

Holmes, R.
1961

Insect Observation Plots

12 June Barrow, Alaska

O.P. - A. High polygon top, dry grassy-sedge
+ moss clump cov. 1500-1515
10-15 collembola / sq. in.

O.P. - B. Damp, polygon trough with sedge +
springy, moist moss. 1520-1535
1 spider

O.P. - C. Ridge slope, damp, covered
with sedge + grass. 1540-1555,
1 spider
1 collembola

O.P. - D. Relatively dry ground on flat land
at base of ridge. - mostly sedge.
1605 - 1610.
- nothing.

15 June O.P. - A. - 1510-1520. few collembola

O.P. - B. - 1525-1535 - none

4 July Barrow - 13 warm clear - light W. wind.

O.P. - A. 1500-1515 - 2 - see sample

B 1515-1530 - 1 small fly

C 1535-1550 - spider - 2; 1 get on Crane
fly - 1; green midge - 1, small dark,
stout fly - 15; small thin abdomen fly - 3.

D - 1550-1605 - 6 small stubby fly - all C

Holmes, R.
1961

Observation Plots

21 June Barrow, Alaska

O.P.A. - 1540-1550 - 0

O.P.B. - 1550-1600 - 1 spider

(Sedge at 1" - Saxifrage bear out)

O.P.C. - 1605-1615 - 1 small bl. fly -

Ranunculus in bloom. Grass at $\frac{1}{2}$ "

O.P.D. - 1620-1630. - 0

4 July - See above

7 July Barrow, Alaska

O.P.-A 1440-1450. - 2 small black flies

O-P-B 1450-1500 - 1 lge & Tipulid - vest. wing
1 med-sized black fly
2 small - black flies

O-P-C - 1503-1513 - 1 caterpillar

1 spider

4 small black flies

O-P-D 1515-1525 - 1 lge br Tipulid

2 small bl. flies

1 small midge (green
abdom.)

1 spider

Holmes, P.
1961

Observation Plots

11 July Barrow, Alaska

- O. P. - A. - 1500 - 1510. - 3 small bl. flies
1 lge ♀ - Tipulid - urst. wings
1 Ad. Chironomid.
10+ mosquitoes
- O. P. - B. - 1510 - 1520. - 1 wingless ♀ walked thru
1 winged Tip - " "
1 wingless ♀ - " " - Othoridin
6 - small bl. "
1 large chironomid
1 sandp. drizzle
10+ mosquitoes
- O. P. - C. - 1525 - 1535. - 1 bug (hemiptera)
1 wingless ♀ - walked thru
1 winged Tip.
6 bl. house fly - like flies
4 - small bl. flies
1 - spider
10+ mosquitoes
- O. P. - D. - 1537 - 1547. - 2 winged Crane flies
- 6 small bl. flies
- 1 Chir.
- 1 large bl. diptera
- 20+ mosquitoes

Weather - clear with patches of clouds, seas
obscuring the sun. Warm - 50-55° -
5-8 mph - westerly wind.

Holmes, R
1961

Observation Plot

15 July Barrow, Alaska

A 1530-1540 - nothing seen

B 1540-1545 " "

C 1546-1552 " "

D 1558-1603 " "

Weather cold (35°), raining lightly - low overcast
wind 5-10 mph - Westerly

16 July A 1420-1430 - 1 lge winged Tipulid - collected
1 lge black House fly-like - coll. in D
1 sm. black-c. fly

B 1430-1440 - 1 small - long, bl. fly
2 very " " - coll.

C - 1442-1452 - 2 small bl. flies -

D 1455-1505 - 4 very " " - as in B
2 lge bl - House fly-like - coll.

Weather - 40°F - 5-10 mph N.W. wind - high
overcast - occas. flashes of sunlight

Holmes, R.
1961

Observation Plots

19 July Barrow, Alaska

Plot A - 1423 - 1433 - 1 sm. bl. fly

1 med " . . long abdom.

Plot B - 1435 - 1445 - 3 sm. bl. flies

Plot C - 1447 - 1457 - 1 spider

1 staphilinid beetle - Ad.

Plot D - 1459 - 1409 - 2! ge House-fly like - bl fly - 1 we.

1 med bl. fly - coll.

1 sm bl. fly.

Holmes, R.
1961

Observation Plots


23 July Barrow, Alaska

Weather - partially cloudy - intermittent cloudy +
patches of sunshine - warm - 50°F. - Wind
5 mph from N.W.

Plot A - 1337-1347 7-8 mosquitoes - hovering to 3' in air
2-1/2 lg. bl. House fly
3 med " fly - long abdomen.
5-sm bl. fly.

Plot A' - 50' away from ^(N.W.) A - similar vegetation -
1348-1358. 10+ mosquitoes
1 med bl. fly
3 sm " "

Plot A'' - 30' - NW of A - with 20% more moss clumps
1359-1409 - 10+ mosquitoes
2 1/2 lg. bl. House fly
2 sm. h. fly

Plot B - 1410-1420 - 6-8 mosquitoes
3 sm. bl. fly
1 lg. House fly
1 med long-abd. fly - 1/2
1 med fly with wings folded
in Pinnacles - 

Holmes, R
1961

Observation Plots

23 July Barrow, Alaska

Plot B' - 20' N. of B - same vegetation

1421-1431 - 15+ mosquitoes

- 2 sm. bl. flies

Plot B'' - 60' N. of B - more sedge - otherwise similar

1432-1442 - 10+ mosquitoes

1 lyr "H.F."

2 sm. sh. flies

Plot C - 1444-1454 - 15+ mosquitoes

- 3 sm. bl. flies

1 med - long-abd. fly

1 " - brown fly - ?

Plot C' - 30' NE of C - Same habitat

1455-1505. - 15+ mosquitoes

1 lyr "H.F."

1 med long-abd. fly

3 sm. bl. flies

Plot C'' - 50' E of C - Same cond's

1506-1516. - 15+ Mosquitoes

- 3 sm. bl. flies

- 1 med brown fly - 1 wing

- 1 Bl. "H.F."

- 1 Hemipterid as coll.

before

Holmes, R.
1961

Observation Plots

23 July Barrow, Alaska

Plot D - 1518-1528 - 20+ mosquitoes
2 bl "H.F."

Plot D' - 30' - NE of D - same veget. + topog.

1529-1539 - 10+ mosquitoes,

- 1 med. long-ab. fly,

2 sm. bl. fly

Plot D'' - 60' NE of D - " " " "

1540-1550 - 10+ mosq.

- 1 sm. wh. fly

Holmes, R.
1961

Observation Plots

27 July Barrow, Alaska

Weather sunny with scattered clouds. Temp. 40-45°F -
wind 15 mph with gusts to 25.

Plot A 1330-1340. - 1 "H.F." - stayed in plot all 10 min.

- Stellaria in bloom

Plot A' - 30' WNW of A. - 50% ^{in flower,} Carex - 30% Dup. 20% - sarratoga
1341-1351. - 1 "H.F." - moved through, walking

Plot A'' - 60' W of A - 30% Carex, 10% Dup. -

30% bare (debris) + Stellaria, Saxifraga, Salix

1352-1402. - 2 long abd. bl. flies - 1 coll.

1 sm. bl. fly

Plot B - 1403-1413 - 1 sm. " "

1 long abd. bl. fly. - see A above

B' - 30' NW of B - same vegit. - sun out, clouds

1414-1424 - 1 H.F.

1 sm. bl. fly

B'' - 30' SE of B - same vegit.

1425-1435. - 1 long abd. fly

Plot C - 1436-1446. - nothing - under - wing to 20 mph

C' 1447-1457 - "

Plot D - 1458-1508 - 1 - abd fly

1 wingless & tipulid

D' - 50' - NE of D.

1509-1519 - 1 "H.F."

Note: Ads. tipulids have got. ~~in~~ deer dump

last 2 weeks

Holmes, R.
1961

Observation Plots

2 Aug Barrow, Alaska

Weather: clear, light (1-5 mph) wind from W. Storm subsided last night.

Plot A - 1405-1413 - 2 med long-abd. bl. flies

A' - 50' N. of A. - 1416-1426 - nothing

A'' - 75' NNW of A. - 1427-1437 - "

Plot B - 1438-1448 - 1 sm. bd. fly

1 Hymenoptera - 150 - brown wing?

1 med long-ab. bl. fly

B' - 1449-1459 - 2 sm. bl. flies

- 45' NW of B - denser vegetation

B'' - 1500-1510 - 2 Hymenoptera

1 'H.F.'"

- 30' - E of B

Plot C - 1511-1521 - nothing

Plot D - 1522-1532 - 1 med long abd. fly

1 fly? New wasp pit as 1 elev.

Holmes, R.
1964

Observation Plot

9 Aug Barrow, Alaska - #16

Weather rainy + cold during the past week.
Today it was sunny in the morning with
fog hanging over the ocean. By 1330, the
fog began to come in + the sky became
over-cast. Wind 8-10 mph from E. Temp -40°

O.P. - A - 1340-1350. Nothing

A' - 30' W of A 1351-1401 - Nothing

O.P. B - 1402-1412 - Nothing

B' - 1413-1423 - " - 20' E of B

O.P. - C - 1424-1434 - 1 long-abd. - brown fly - coll!

C' - 30' - NE of C - 1 " " - 15. fly

1435-1445 →

O.P. - D - 1446-1456 - Nothing

D' - 30' N of D - 1457-1507. - Nothing

- no vacuum sampler taken due to
broken machine.

Holmes, R.
1961

Observation Plots

13 Aug Barrow, Alaska - #17

Weather - cloudy (high overcast), 4-5 mph - NE wind
(yesterday - sev. hrs of sun, but fog last night) Temp = 45°F

Plot A - 40% duff - (and)

60% growing (green) vegetation

Luzula - 15%

Carex - 5%

Hypochaeris - 20%

Stellaria - 10%

moss - 5%

Poa - 5%

1410-1420 - nothing

Plot A' - 40' W of A - 1421-1431 - nothing

Plot B - 20% duff 1431-1441 - nothing

80% green vegetation

40% - moss

5% Saxifraga cernua + Ranunculus

30% Durandella

5% Carex

B' - 20' - NW of B 1442-1452 - nothing

Plot C - 10% duff

90% vegetation

10% Saxifraga cernua + Ranunculus - Pedicularis

50% Carex - Luzula

30% Durandella

Holmes, R
1961

Observation Plots

13 Aug Barrow, Alaska

Plot C - 153 - 1503 - 1 Staph. beetle - Ad.

C' - 20' E of C - 1504-1514 - 1 sm. bl. fly (with
vertically held wings)

sun just came out clouds are moving W.

Plot D - Duft 10%

veg. - 90%

60% - Carex

- 5% Petasites

10% Salt

- 5% Saxifraga

10% Dupontia

1515-1525. 2 sm. bl. flies - as in prev. days

2 med long abd. bl. flies

D' - 25' E of D - 1526-1536 - 2 med L-a-bl. flies

21 Aug - short look take at all 4

man sat - no insects seen

vacuum sample taken

Insect Sampling

10 June Barrow, Alaska

Several samples have been taken during the past few days, but only occasional larvae have been found.

Today - a plot was semi-established on the ridge - w. 1 VOTH's Area. (No. 1 Taphnia ~~IV~~ A+B). The ridge is grassy with slight polygons. Two m^2 plots were placed on polygons (B+C) + one in a trough (A). A soil sample was taken 2' away for A+B. The result of exploring there:

A-1 - $\frac{1}{2} sq'$ - 3 ch. ^{2" deep} worms - or 4/sq ft or 56/sq. yd.
B -

All plots were watched for 10 min. 3 spiders were seen in plot A; nothing in the other two. This obs. method will only be good for finding emergence & certainly not larval activity.

Holmes, R.
1961

Insect Sampling

12 June Barrow, Alaska

Insect Sampling area established No. of Voth's Area (see map with journal). Four sod samples were taken: 1 from polygon top, 1 from trough, 1 from slope & 1 from dryish ground near marsh edge. Pond samples were taken from 5 tundra & 5 lowland-marsh ponds.

Sod Sample A (S-A) - High polygon top, dry, mostly covered with moss & scattering of sedge. Permafrost at 6".

Sod Sample B (S-B) - in moist polygon trough, 40' east of A. Wet, mossy, sedge & grass area - permafrost at 5 cm

Sod Sample C (S-C). Upper slope in "bumpy" ground. - Sod wet - contains sedge & grass - permafrost at 5 cm

Sod Sample D (S-D). Near temporary & permanent pool - grasses, sedges, damp. permafrost at 5 cm.

Pond Sample. A → E - in among polygons
E → J - in flat, marsh, sedge flat areas
Samples taken on south shore

Holmes, R.
1961

Insect Sampling

2.

12 June Barrow, Alaska

Pond A - approx. $25 \times 60'$, deep with grassy-sedge edge. Temp 11°C - permatrust at $4''$.

Pond B - $30 \times 30'$, deep with sharp drop off. Temp = 5.6°C pfr = $2''$

Pond C - $70 \times 25'$. Deep with 80% of bottom covered by ice. Temp = 1.5°C . Pfr at $1''$ - grassy edge

Pond D - $60 \times 80'$ deep with 60% ice cover (starting $10'$ from shore). Temp = 9°C P-fr at $3''$ - grassy

Pond E - $40 \times 20'$ with 70% ice cover ($4'$ from shore), grassy bottom. Temp 6.6°C - pfr at $2''$

Lowland Pools = lowcenter polygon pools

Pond F - $40 \times 70'$, tall grass in water + grassy margin - 20% ice Temp = 8°C

Pond G - $50 \times 40'$, deep - no ice. grass-sedge - Temp = 8.6°C

Pond H - $30 \times 20'$ - grass and moss with 20% ice - Temp at 3°C

Holmes, R.
1961

Insect Sampling

3.

15 June Barrow, Alaska

Sod + Pond samples taken between 1300 + 1500.

Pond E - temp at 4°C

F - " at 5°C

Pond I - $50 \times 20'$ - sphognum - sedge
covr - 5°C

Pond J - $40 \times 30'$ - round + deep with
sharp drop off - edge covered with
moss + sedge.

18 June Barrow, Alaska

Samples taken during the early afternoon.

Pond A - shrunk - ^{2 ponds} now $15 \times 15'$ - 6.0°C
- pfr at $6''$

P - B - $20 \times 15'$ - 7.20°C pfr at $4''$

P - C - no ice - same size - 7.0°C

P - D - now broken into 2 ponds - So. pond
being sampled - $40 \times 30'$ - no ice (still
 20% ice in No. pond). Temp = 6°C

P - E - shrunk by $1'$ - 6.80°C - pfr at $4''$

Sod A - pfr at $2''$

B - " " $5''$

C - " - $3''$

D - " + $3''$

Holmes, R.
1964

Insect Sampling

18 June Barrow, Alaska

Pond - F - 7.6°C - same size, none, pfr at 3"
P - G - 7.5°C - none - down 2' - pfr at 5"
P - H - 7.2°C - pfr at 5"
P - I - 7.6°C - pfr. at 4"
P - J - 6.8°C - pfr at 4"

21 June Barrow, Alaska

A - 6" pfr
B - 6" pfr
C - 6" pfr - many Collembola - surface
D - 6" pfr
E - 4" pfr - " " "

25 June

P - A - 10°C - $10 \times 15'$ - grass to 5" - filling
in pond - pfr at 4"

P - B - 7°C - same size - grass to 3" -
pfr at 4"

P - C - 8.2°C - same size - pfr at 4"

P - C' - Not w. of C - 9.0°C , pfr. to 5",
Vegetation to 3". $20 \times 25'$ - grass -
sedge edge

P - D - 8.8°C - no change in water level
pfr at 5"

P - E - 9.5°C - little level change
down by 2" - pfr at 6"

Holmes, R.
1961

Insect Sampling

25 June Barrow, Alaska

P-F. - temp? - slight drop in level - ptr at 4"

P-G - 8.2°C - none - ptr at 6"

P-H - 8.8°C - none - 6"

P-I - 10.5°C - ptr. at 5" - no change in level

P-J - ? - ptr at 5" - slight " " "

28 June Barrow, Alaska

Samples taken between 1300 & 1700.

P-A - # 6

3 July Barrow, Alaska

P-A - # 7 - 15' in diameter, dropped 6' - now
in weeds. temp = 9°C - ptr at 8"
1 Ad. crane fly seen.

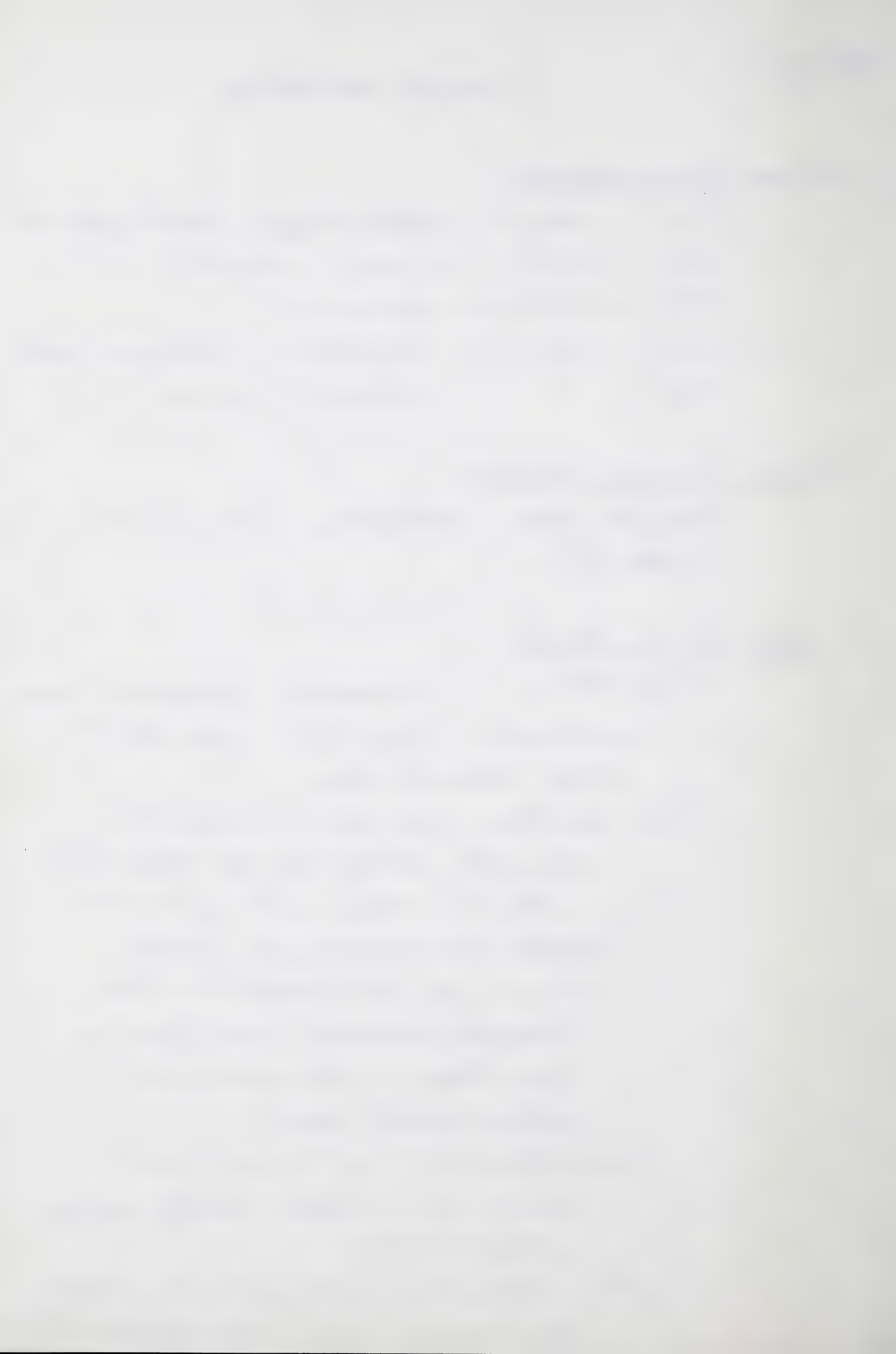
P-B - 20' dia - ptr at 10", shrunk 1' -
deep with sharp drop off. temp = 7.5°C

P-C - drop 6" - temp 7.5°C - ptr at 10" -
samples all at same level, exc. top
which was just below the others.

A sample was taken on 28 June &
again today - in the water & 2½'
above water level.

P-D - shrunk 2' (last 3 about same) -
prod 25' in diam. ; sedge edge
temp = 7.6°C

P-E - shrunk 3', last 3 samples same -
very grassy edge, mossy bottom - 8.8°C



Holmes, P.
1961

Insect Sampling

3 July Barrow, Alaska

P-F - 9.20°C - dredged 3", pbr at 4"
P-G - 9.20°C - dredged 3', pbr at 7"
P-H - 8.20°C - " 2', last 3 samples same
P-I - 8.00°C - " 3'; last 3 " "
P-J - 7.00°C - " 2'.

17 July Barrow, Alaska

P-A - 13.80 - in wet ground

P-B - 14.00°C.

P-C - 14.40°C

P-D - 13.50°C

P-E - 13.80°C

lowland pond - incl. with the pond descriptions

15 July Barrow, Alaska

P-A 6.80°C

P-F 5.80°C

P-B 6.20°C

P-G 6.80°C

P-C 7.20°C

P-H 6.60°C

P-D 6.60°C

P-I 6.00°C

P-E 5.70°C

P-J 5.60°C

C' - 5.1 - Pond N. to 6 C. -

L - 6.8 - large pond S of F, G, + H - Arctophila
filled. - taken at 10:30 am

K - 5.8 - black mud pond close to water area

16 July

M - 9.80°C - " " " " " "



Holmes, R.
1961

Insect Sampling

19 July Barrow, Alaska

Sampled from 1330 - 1500. - Cool - 40° -
5 mph NE wind.

P-A - 8.20 C

B - 6.8

F - 3.8

C - 6.6

J - 7.8

D - 5.6

E - 8.8

21 July took sample at k + m - in early afternoon -
cold. temps:

k = 7.2°C

m = 6.8°C

23 July Observations plots 1330 - 1600. Samples taken
1600 - 1700. Weather clear + warm - 50° +
little insect activity (except mosquitoes).

The rain of last 20, 21 July - raised the
level of ponds A, B, E, J, k, m - - most
noted at A + E - which had become
almost dry

A = 13.2°C - 2' above last sample

B = 14.2 3" higher

C = 13.8 same level

D = 11.6 " "

E = 15.2 1' higher

F = 14.8 - same level

J = 15.2 6" higher

Holmes, R.
1961

Insect Sampling

23 July Barrow, Alaska

P-k - 17.0°C - 1' higher - mud / black mud
covered with water
 15.8°C - 1' higher.

27 July Barrow, Alaska

P-A - 7.6°

F 7.8°

B 6.8°

J 8.6°

C 6.8°

K 8.4°

D 7.0°

M 7.8°

E 7.8°

30 July Barrow, Alaska

P-A - 8.2° - level up to Tract #4.

B - 8.0 - level up 5"

C - 8.6 - " " " - to upper level 1 all

pond edge samples

D - 8.6° - same as C. -

E. 9.0°C - level up to upper edge of #2 - all
others are underwater

F - 9.4° - up 1' - covers old sample

J - 10.6° - rain 1'

K - ? - mud covered - sample in under
2" of water

M - ? - " " " " " " " " " " " "

1030 - 1130.

Heavy Rain fell during the previous day
along with high winds - water
level raised considerably & more
sampling was well up - the gross, frozen

Holmes, R
1961

Insect Sampling

4 Aug Barrow, Alaska

- P-A - 8.3°C - pond level up to 6" above sample #1. The 2 ponds are about connected again.
- P-B - 7.2°C - 1' above most recent samples - 6" above #1
- P-C - 7.9°C - up 1' - 2' high
Samples covered.
- P-D - 7.8°C - up to upper edge of #1 -
pond connected with upper pond.
- P-E - 8.2°C - up to upper edge of #1 -
enlarged to 30' in diameter
- P-F - 8.6°C - #1, 2, & 3 - above water -
remainders are all below.
- P-J - 8.8°C - all samples below water
- P-K - 8.8°C - mud covered by 3-4" of
water - sample taken under ...
- P-M - 9.2°C - mud sample taken under
3" of water 1 RB core rec'd.

8 Aug Barrow, Alaska

P-A - 7.2°C - no change in level

B - 8.4°C

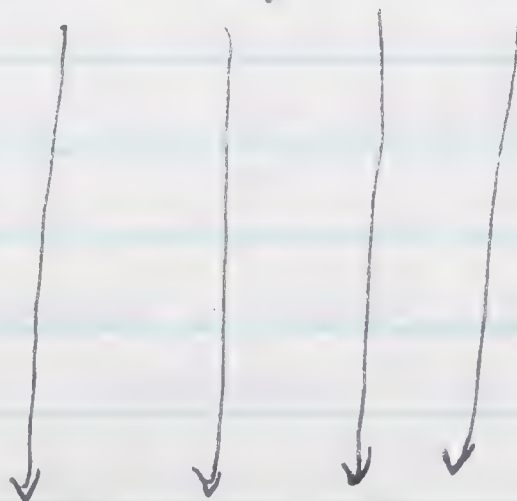
C - 7.4°C

D - 8.0°C

E - 9.6°C

F - 8.8°C

J - 8.8°C



K = 9.6°C - 4" water M = 9.2°C - 3" water

Holmes, R.
1961

Insect Sampling

12 Aug Barrow, Alaska

P-A - 8.2°C - 2" shrinkage

B 6.8°C " "

C 7.7°C - no change

D - 6.0°

E - 5.6°

F - 7.8°

J - 7.8°

K - 8.00 - 3" water

M - 8.8° - 3" " "

(Same level as No. 1)

Weather with intermittent sunshine - clear
in late morning. air temp to 50° - but
last few days have been cool with
cold winds & some sprinkles.

16 Aug Barrow, Alaska

P-A - 6.4° - same as 12 Aug

B - 7.2° - "

C - 8.6° - 1" higher

D - 6.8° - same

E - 6.8° "

F - 6.8° "

J - 7.4° "

K - 7.6° " - 5" water

M - 8.2° - 4" " "

Weather cold, windy & rainy, started
early this morning. Most rain fell before
samples taken, but wind (10-12 mph &)
continued all day.

Holmes, R.
1961

Insect Sampling

20 Aug Barrow, Alaska

Weather has been rainy + everything
is soaked.

P-A - 5.6°C - 1' high - grass
flooded for 10' around pool +
The 2 pools are connected again
by open water

P-B - 5.2°C - 1' high - all
previous sample are covered
(about 4" above ^{the} level now) -
grass is flooded to the N, E, + W.

P-C - 5.5°C - up 3" - all prev.
sample covered. 2" high
sample are flooded.

P-D - 5.4°C - up 4" - all previous
samples are covered.

P-E - 5.2°C - up 6" -
all prev. sample covered -
sample taken about 1' above
sample #1

P-F - 5.1°C - up 2"

P-J - 5.8°C - up 4" - cover
grass for 4' back to pond.

P-K - 5.2° - 7" / water

P-M - 5.2° - 4" " " - taken -

small side pool to E - which is now connected
to lot pond - but was isolated to dry ^{the} midsummer.

Holmes, R.
1961

Insect Sampling

24 Aug Barrow, Alaska

Snow last night so that the tundra was covered with $\frac{1}{4}$ - $\frac{1}{2}$ " of powder. The ponds were frozen to various degrees at 1000. The wind (10-20 mph) seemed to aid in the ice melting. I believe the ponds were all covered with ice in the early morning but by late morning, some had melted. Air temperature at 1230 (AT APRU) - -32° . Pond temp from P-A only - due to a broken thermometer after this was taken.

P-A - permafrost = 13" - Temp = 2.5°C

$\frac{3}{4}$ surface was frozen with $\frac{1}{8}$ " ice. The pond was combined with A' & the sample taken today was about 1' above #1. Level at 3.5

P-B - 14" pfr. - level at 5.50. Ice only with $\approx 2'$ rim of ice around the edge ($\sim 20\%$). level (sample about = to #1.

P-C - 19" pfr. - same level as previous sample. Water level = 5.0. Ice present on edge only - in morning the grasses.

Holmes, R.
1961

Insect Sampling

24 Aug Barrow, Alaska

P-D - 16" phr - level at 7.0, Ice only
at edge - The sample taken
about ~ fr #1

P-E - 20" phr. level at 7.0 - $\frac{2}{3}$ covered
with ice. Taken at the same
level as #1

P-F - phr at 11" - level at 3.5, Ice
covering about 15% / pond - around
the edges.

P-I - phr at 14" - same level as last
sample

P-M - 4" water - 2' / ice all around
edge

P-H - 8" water - 2' / ice around
the edges.

(OP) S-A - $\frac{1}{2}$ " / snow - phr at 15"

S-B	↓	15"
S-C		14"
S-D		13"

Holmes, R.
1961

Insect Sampling

28 Aug Barrow, Alaska

P-A. level at 3.3 temp = 2.2°C

P-B level at 5.4 temp = 2.2°C

P-C level at 5.0 temp = 2.6°C

- new level at 5.5

P-D level at 7.0 - temp 2.8°C

new level - 5.5

P-E - level at 6.8 temp 2.6°C

P-F - 4.7 level (tiled) - straightened to 4.3
temp = 2.2°C

P-I - level at 4.5 temp = 2.8°C

P-K - level at 4.4 - temp = 2.7°C

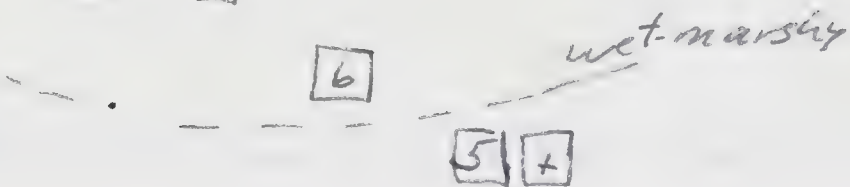
P-M level at 3.5 temp = 2.4°C

Holmes, R
1961

140cm - to open water -



10 July Barrow, Alaska



Pond A.

#1 - at pond edge - scrape

#2 - 30cm below #1 - to the left

#3 - 5cm " #2 - " " "

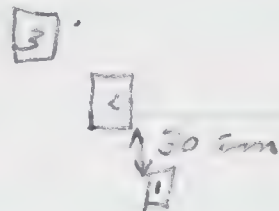
#4 - 20cm " #3 " " "

#5 - even with #4 - " " "

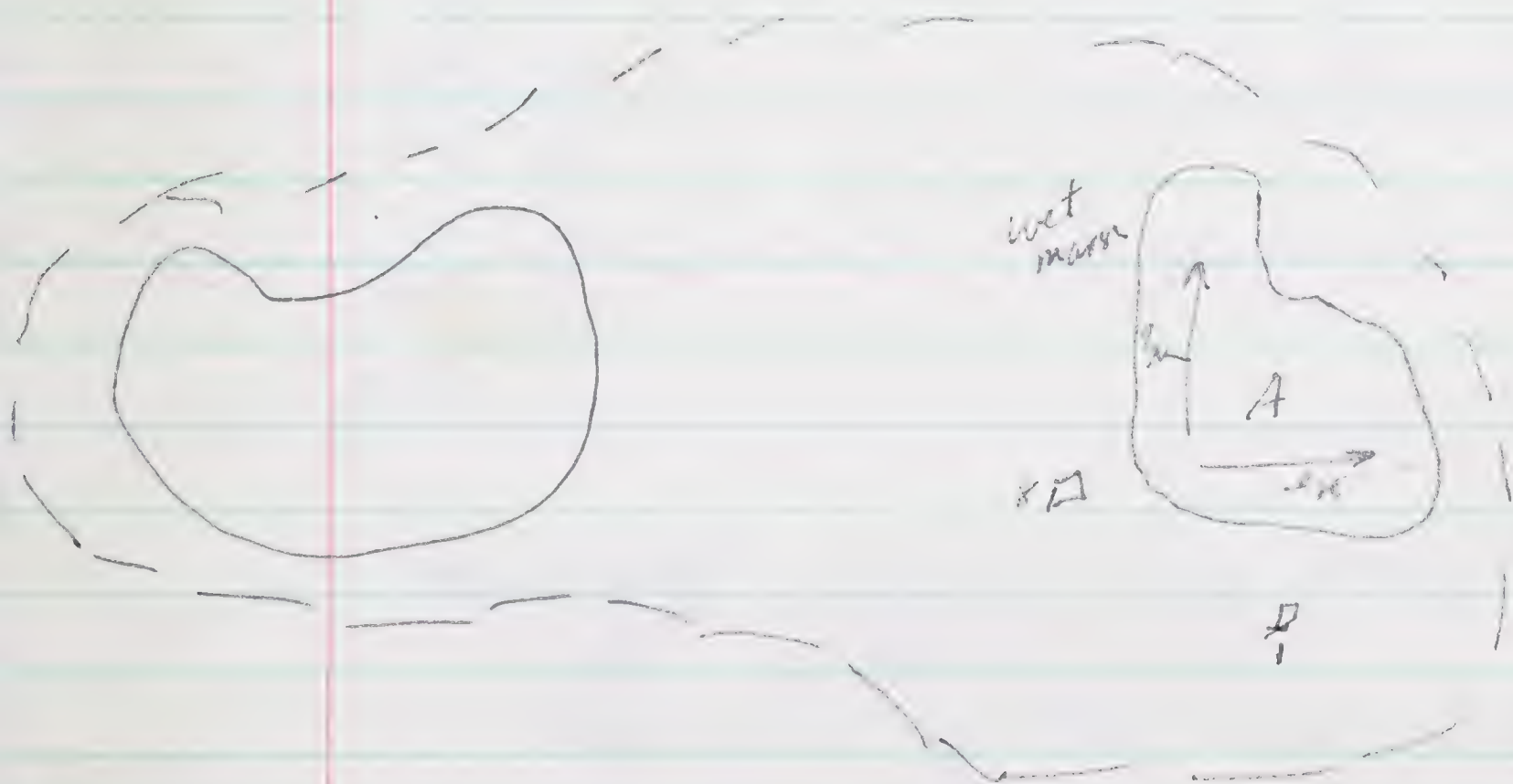
#6 - 5cm below #5 " " "

#7 - 30cm " #6 " " "

#8 - even with #7 " " "



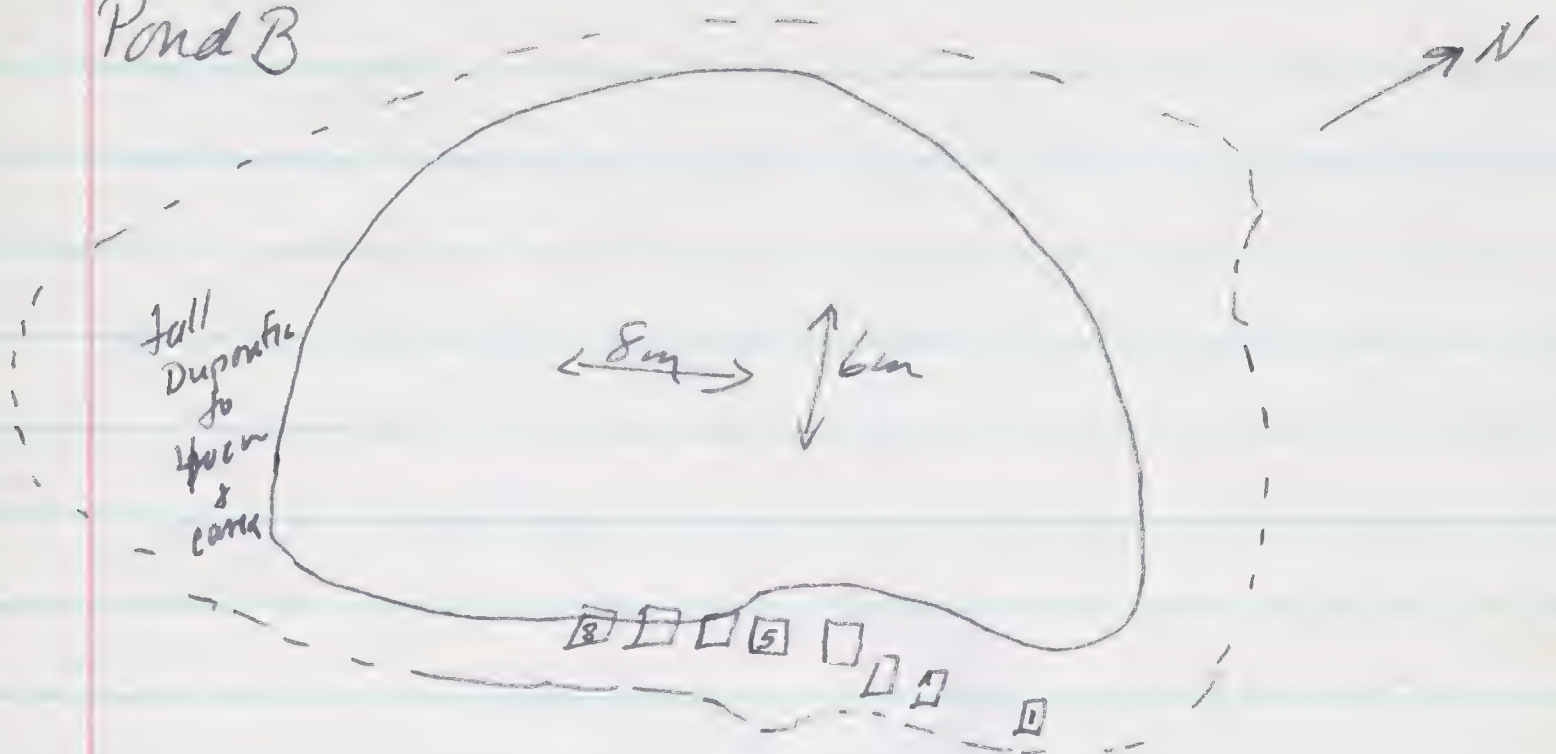
- open water 5m x 3m - E. edge. wet black moss.
other 3 edges - mostly Dicranella - 15-20cm tall



Holmes, R.
1961

10 July Barrow Alaska

Pond B



- #1 - 80 cm above present waterline
#2 - 80 " " " " "
#3 - 80 " " " " "
#4 - 30 " " " " "
#5 - 20
#6 - 20
#7 - 15
#8 - 15

Sharp drop off to deep water - mounds. at edge shown
above - no grass in water -
- bottom covered by black - charcoal-like
muck - moss remain - 1 Red char. mound
& sev. annelids seen in abundant.

Holmes, P.
1961

10 July Barrow, Alaska Pond C

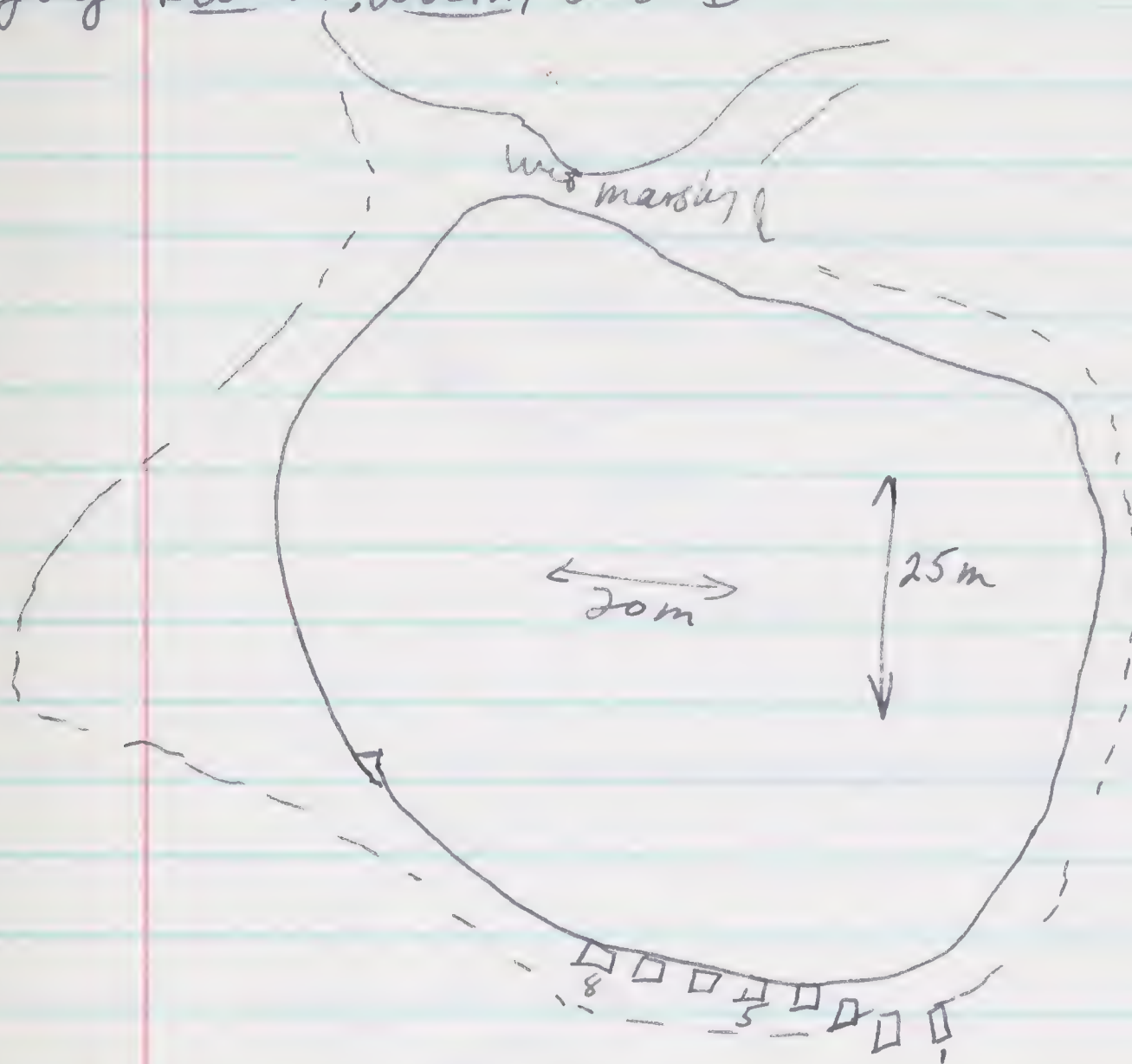


complete grassy edge - with grass in water
at SW + NE corner - otherwise sharp
drop off - but block mossy - same bottom
- with many chironomids

Sample #1	30cm from pond edge				
2	"	"	"	"	"
3	"	"	"	"	"
4	"	"	"	"	"
5	10	"	"	"	"
6	10	"	"	"	"
7	5	"	"	"	"
8	-2 cm	"	"	"	"

Holmes, R.
1961

10 July Barrow, Alaska Pond D



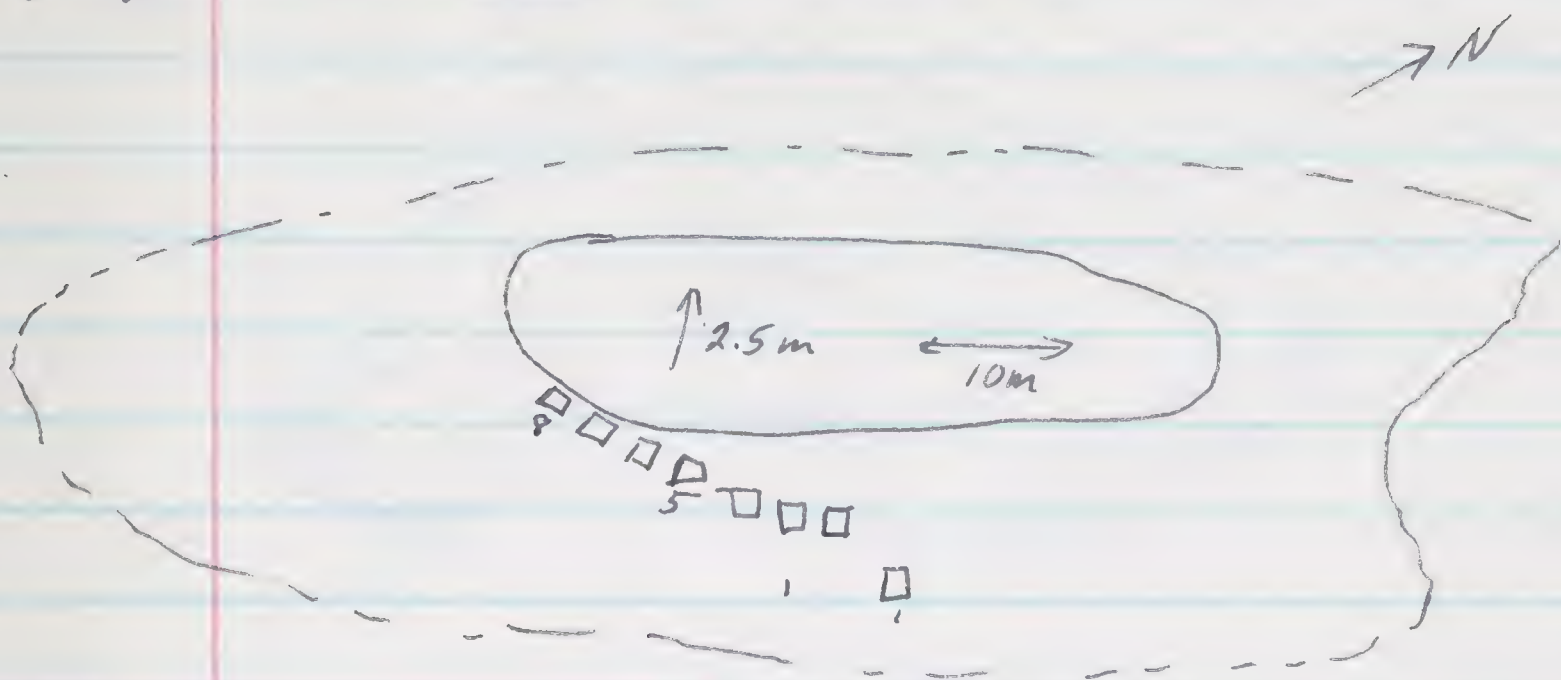
Sample #1 - 100 cm from present pond edge

2	11
3	80
4	50
5	30
6	20
7	15
8	5

grassy edge - mossy bottom with many
chironomids

Holmes, R.
1961

10 July Barrow, Alaska Pond E

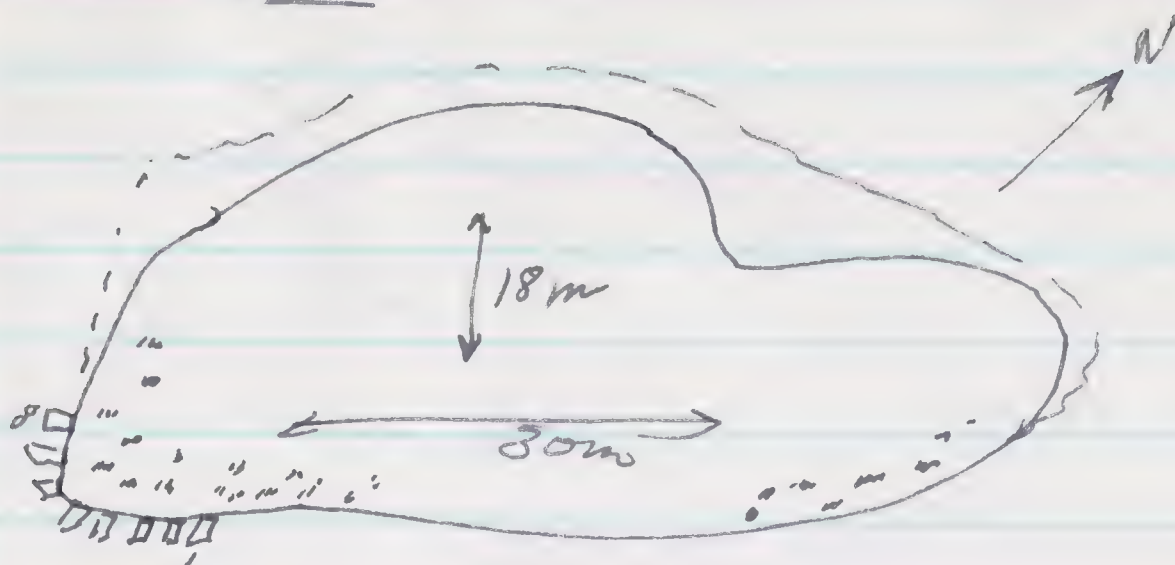


- | | | | | |
|----|---|------------------|---|-------------------------------|
| #1 | - | 150 cm from edge | / | groundwater - 220 cm to water |
| 2 | | 100 cm | " | " " " " |
| 3 | | " | " | " |
| 4 | | " | " | " |
| 5 | | 50 | " | " |
| 6 | | " | " | " |
| 7 | | 30 | " | " |
| 8 | | 20 | " | " |

N. edge - mossy (tall green this year / moss) - other sides are in tall grass - which extend 70 cm out into the water. - long shaggy moss - with 1 gr. chick + 1 summer - handful.

Holmes, R.
1961

11 July Barrow Alaska Pond F

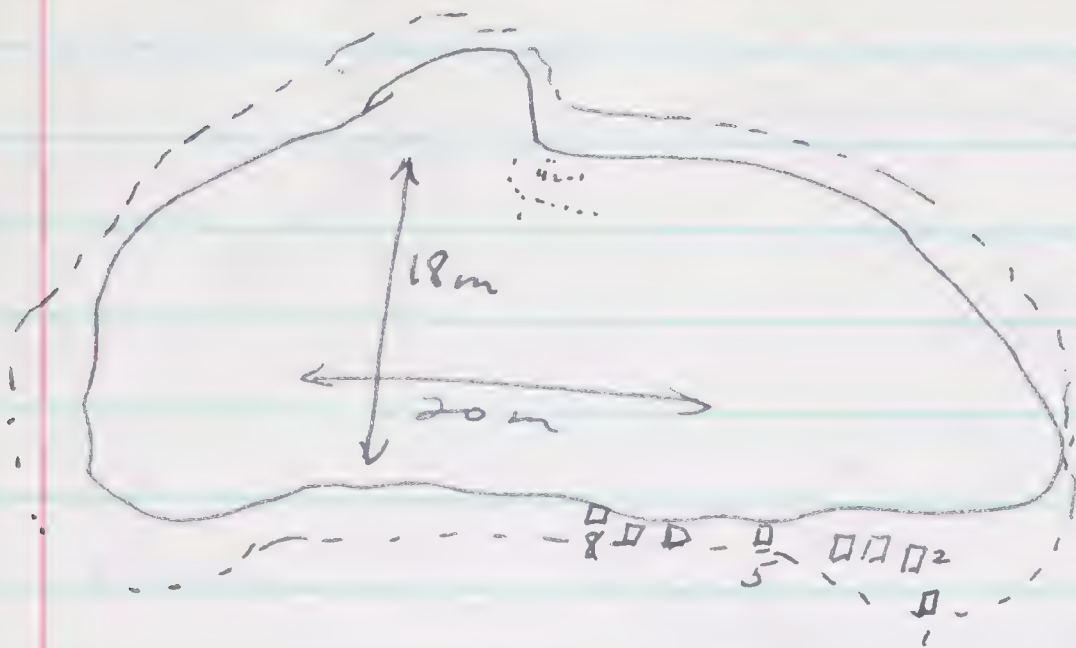


Sampler #1 → #7 - end at pond edge
#8 - $\frac{1}{2}$ way into water. (grass - sediments)

SE + SW sides have grass-choked water
(grass to 30 cm). - bottom in these
areas is choked with debris
& moss. Temp = 15.00 - no animals
in 2 hand fuls

Holmes, R.
1961

11 July Barrow, Alaska Pond G



Sample #1 - 120 cm from edge of water

42 - 50

3 - "

4 - "

5 - 25

6, 7, 8 - "

Pond has scattering of grasses & sedges near the edge & thru parts of the center. Bottom is covered with a light brown (decomposed Sphognum?) moss - which seems devoid of chir. - by 2 samples. Flies abund. around pond
Water temp = 14.8°C

Holmes, R.
1961

11 July Barrow, Alaska

Pond H



Sample #1 - 40 cm from pond edge

2 30

3 "

4 "

5 15

6 "

7 "

8 - at edge

Pond with mostly open water - brown - mossy
bottom & scattered grass around edges

The bottom is only covered with moss,

The underlying matter is grass debris

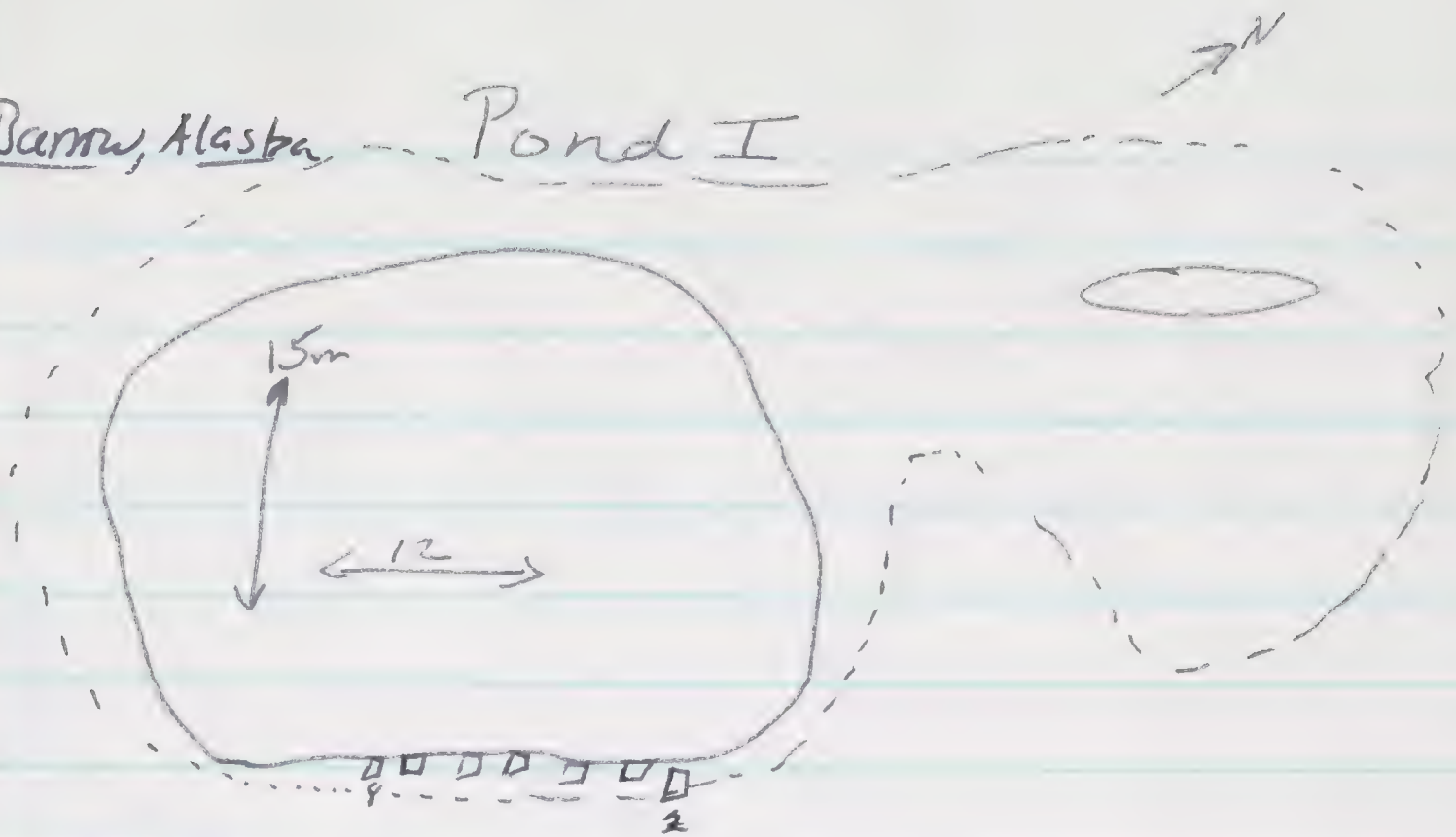
- with little animal life Temp = 15.2°C

Holmes, R.
1961

11 July

Barrow, Alaska

Pond I



Sample # 2 - 100 cm above water

3 - 60 cm " "

4 - "

5 - "

6 - "

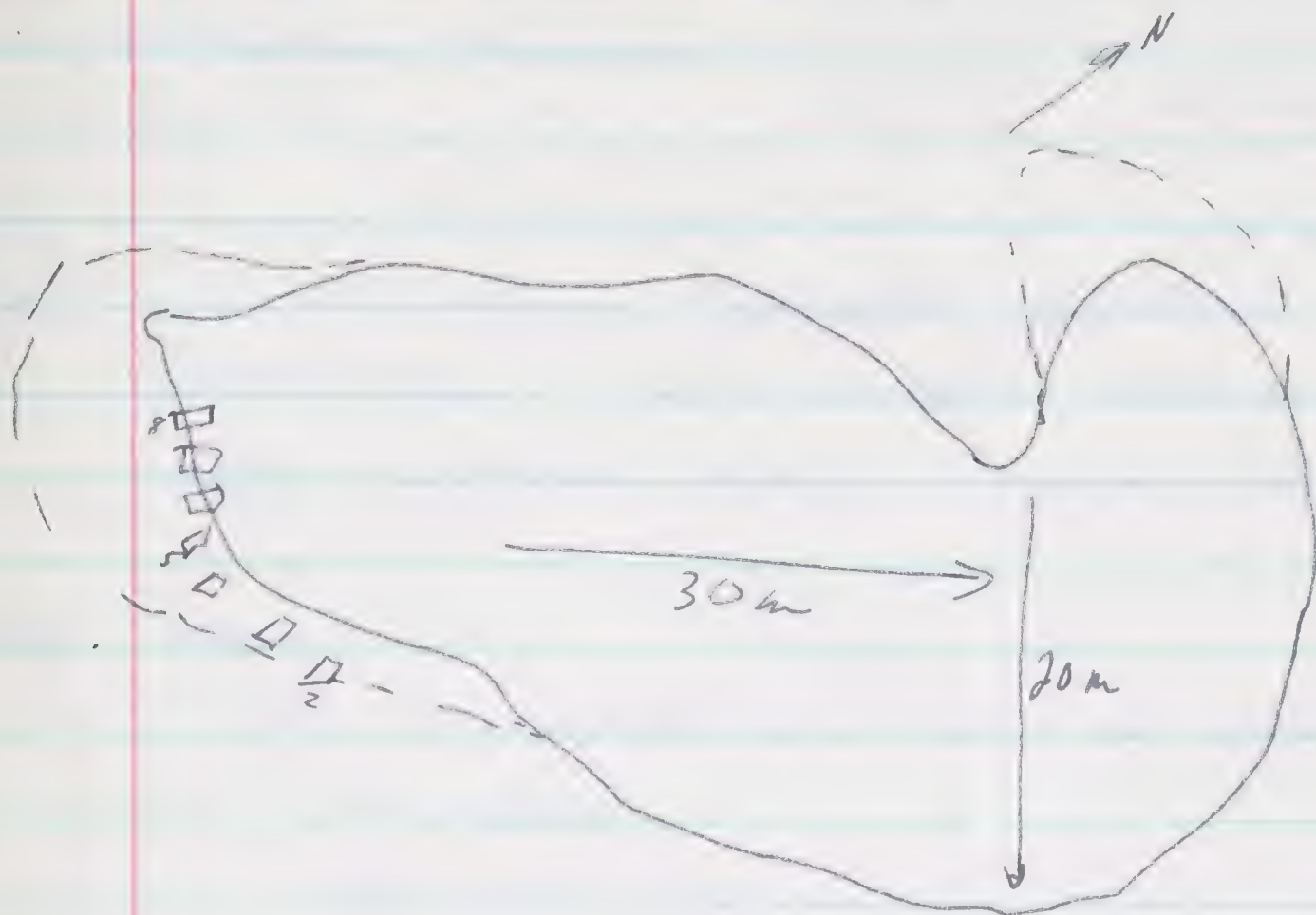
7 - 30

8 - 30

Grassy edges to E+W. Brown-black
mossy - grass debris bottom - little
life Temp. = 14.8°C

Holmes, R.
1961

11 July Barrow, Alaska Pond J



Sample #2 - 90 cm from water edge

3 - 70

4 - 60

5 - 40

6 - 10

7 - at edge

8 - at edge

Pond with grass scattered through it.
grass debris covered bottom. little
sign of life - temp = 15°

Holmes, R
1961

Stom. contents misc.

10 June Barrow, Alaska

- ♂ *Phalaropus fulicarius* -

- ♀

"

"

4 red bloodworms - chironomid

4 Tipulid

5 - red chir.

4 Tipulid

- 2 Tabanidae
(Frey)

10 July

- 2 *Stercorarius longicaudis* collected by
Chamberlain - had stomachs containing
many dipterans - mostly Tipulid adults.

4 Aug.

Barrow

#126p - *E. melanotos* - Juvs - Col. at Ford F -

2 *Prionocera*

1 fly pupal - case

eggs?

saved.

23 Aug Barrow

#1304 - *Phalaropus fulicarius* - Imm -

many *Daphnia* egg cases - +1

Ad insect wing

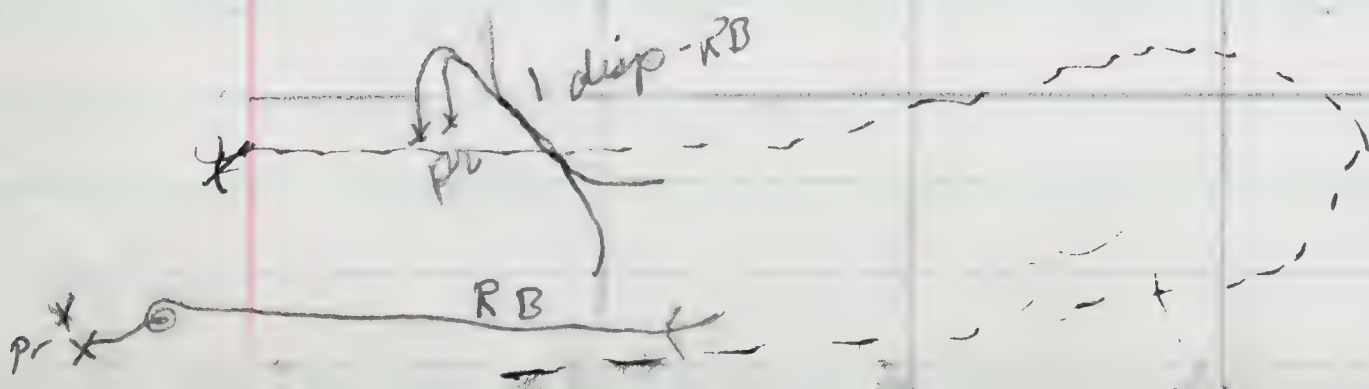
Census Plot - 1961

Holmes, R.
1961

LL

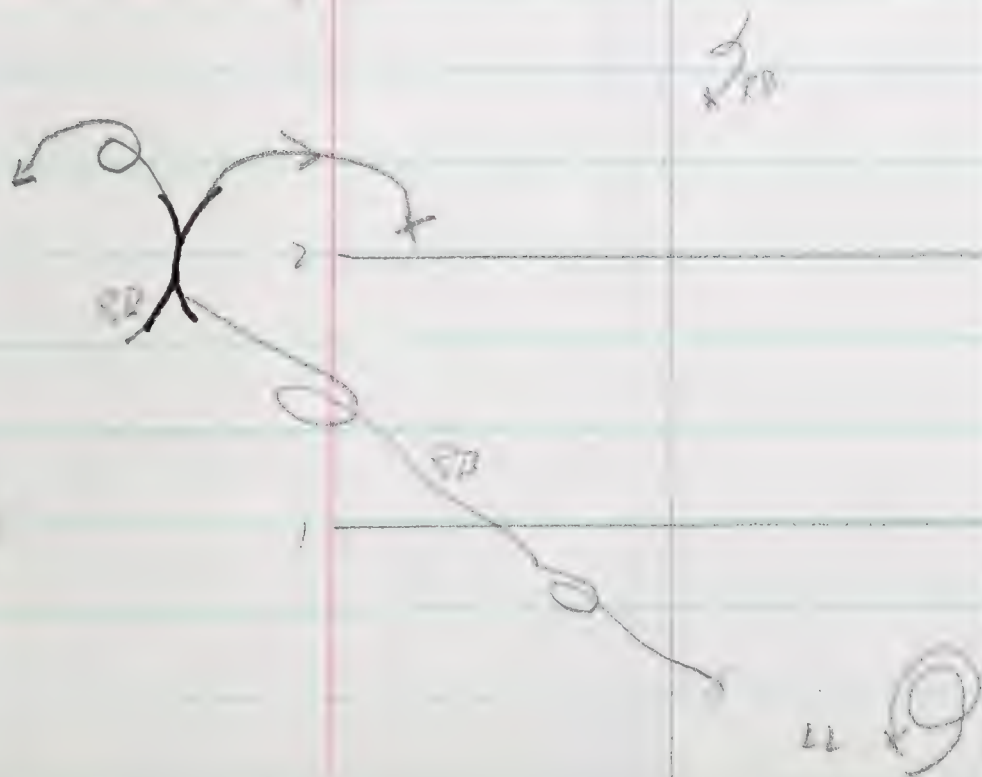
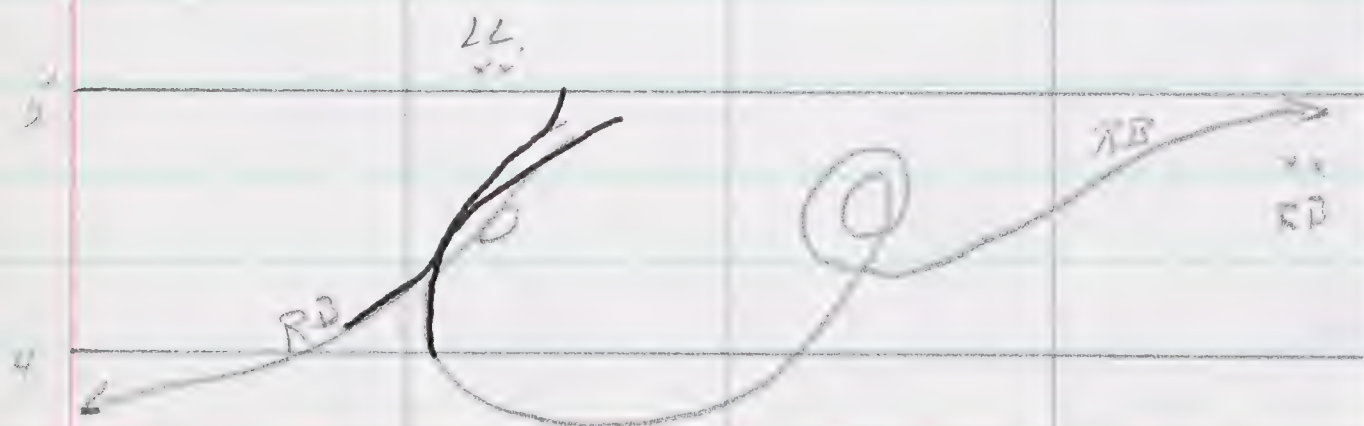
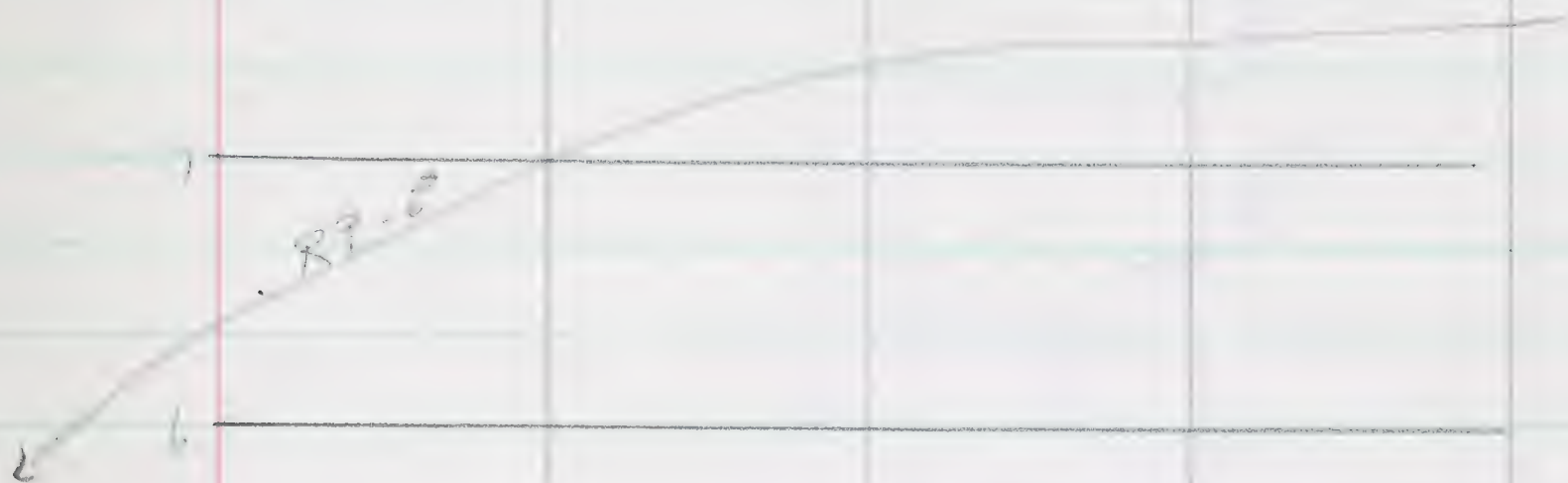
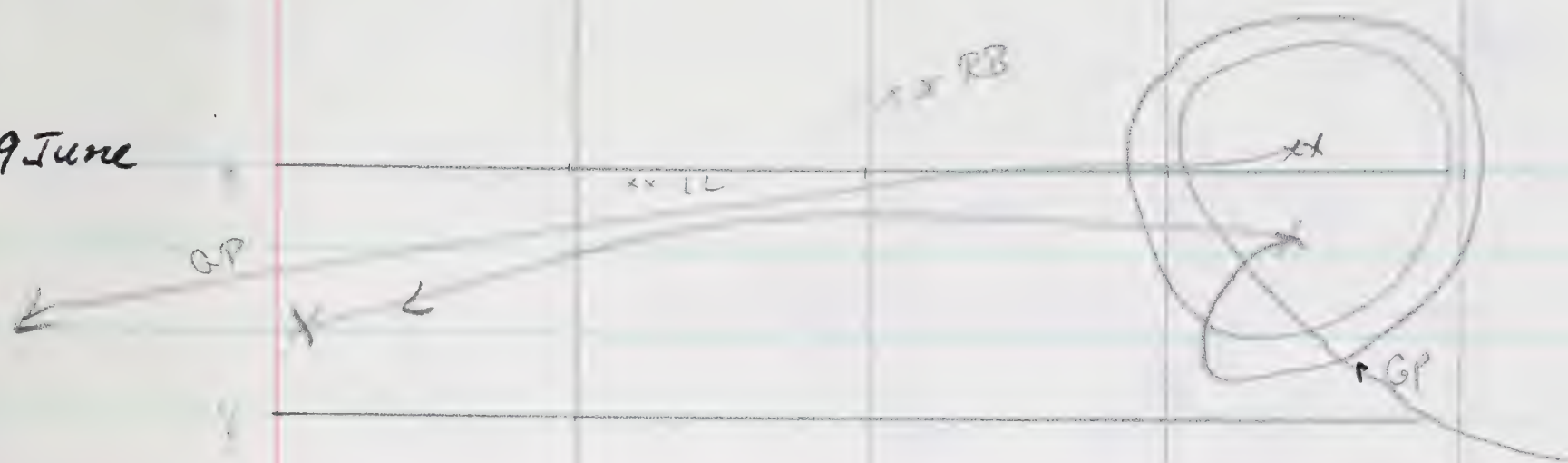
6 June

LL

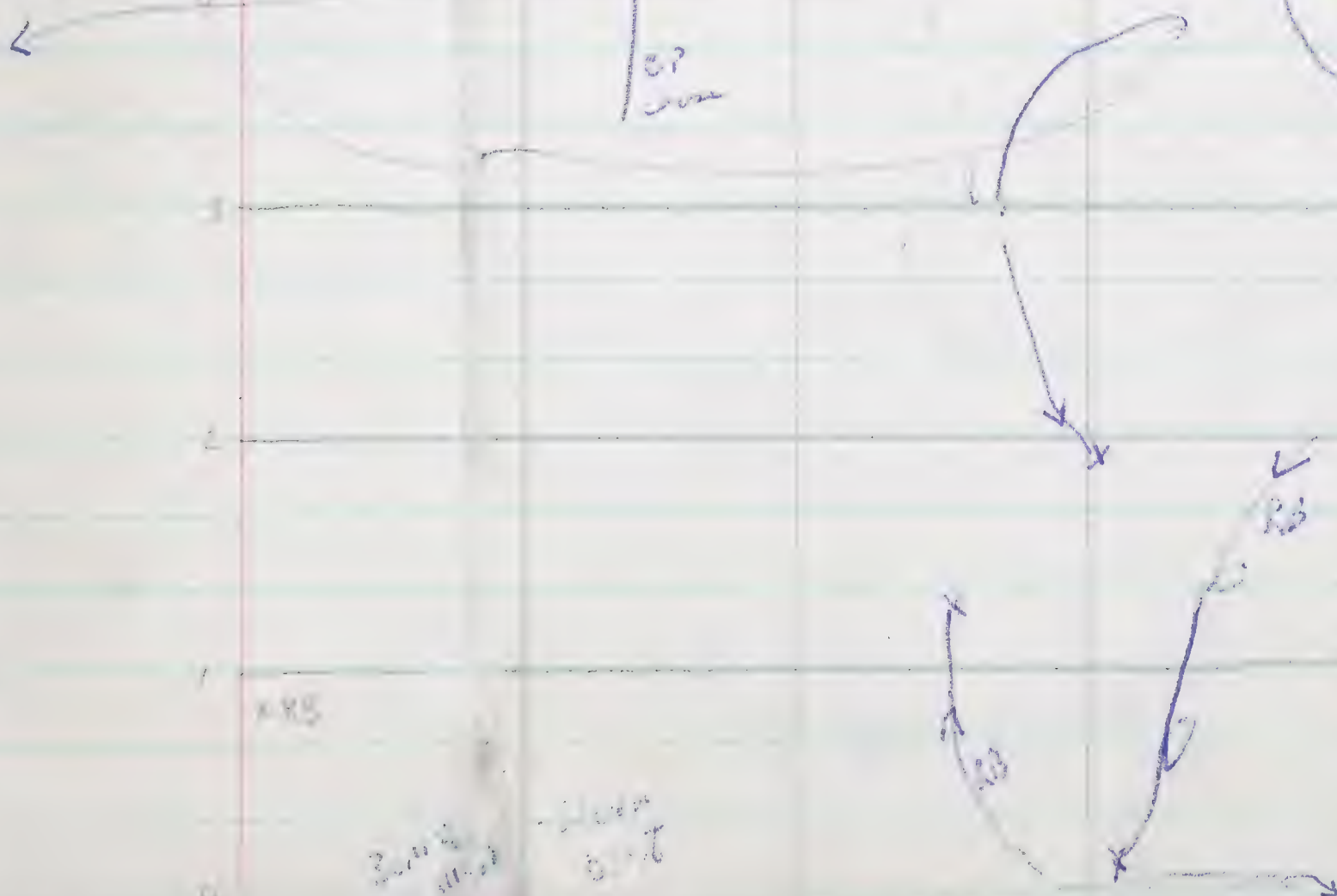
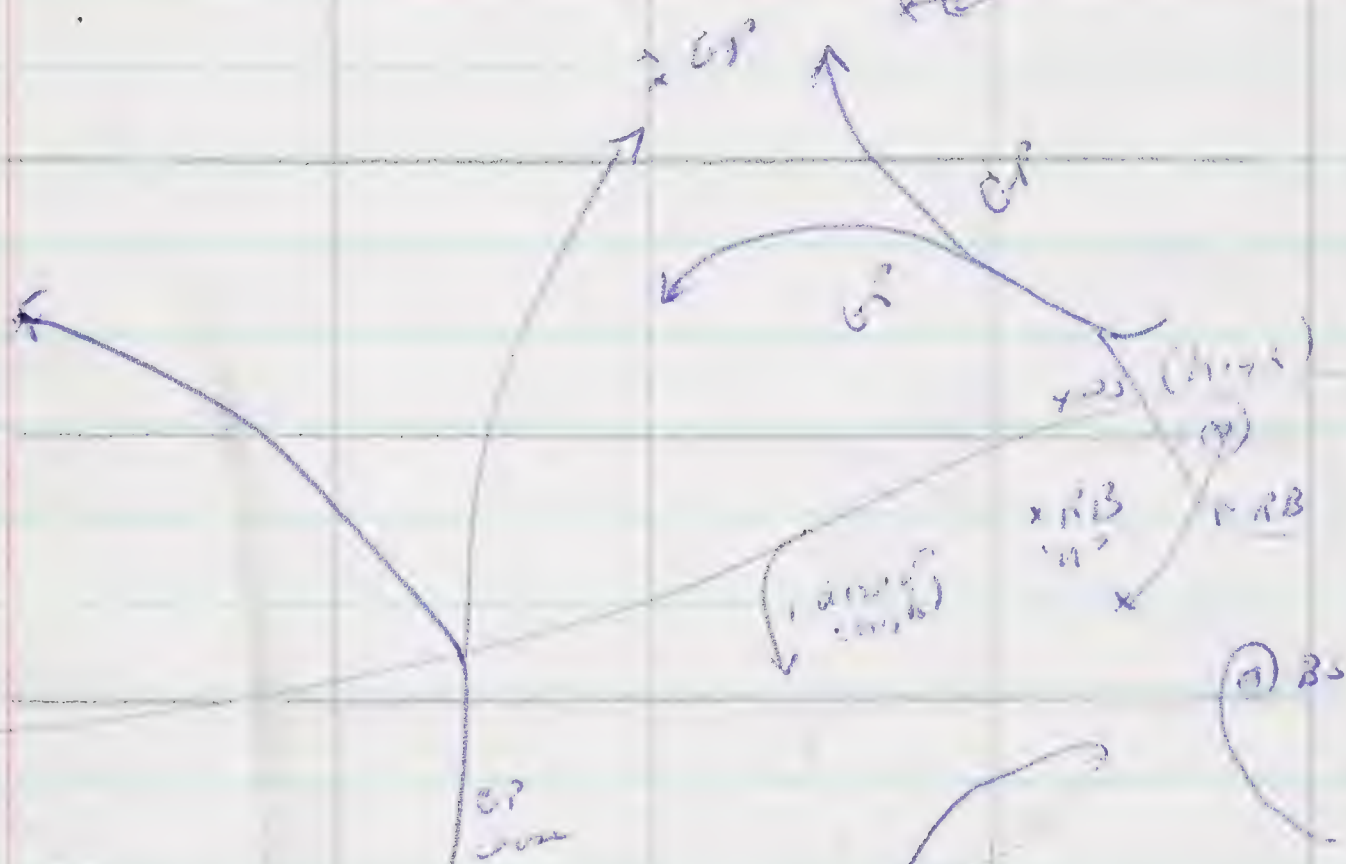


Holmes, R.
1961

9 June

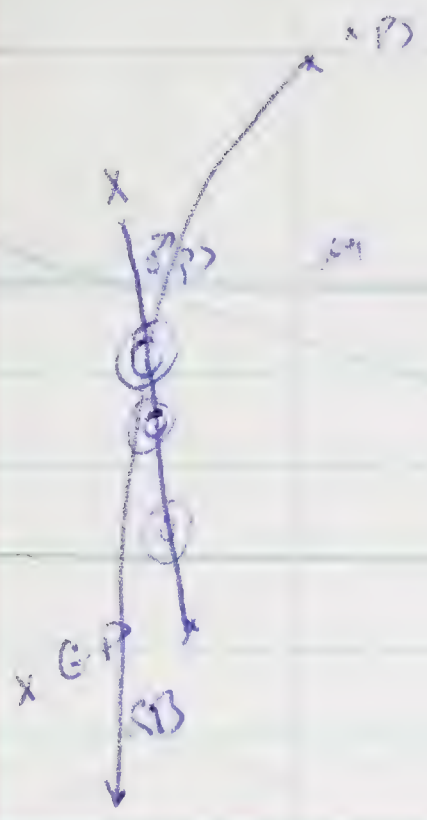


13 June
1030 - 1530



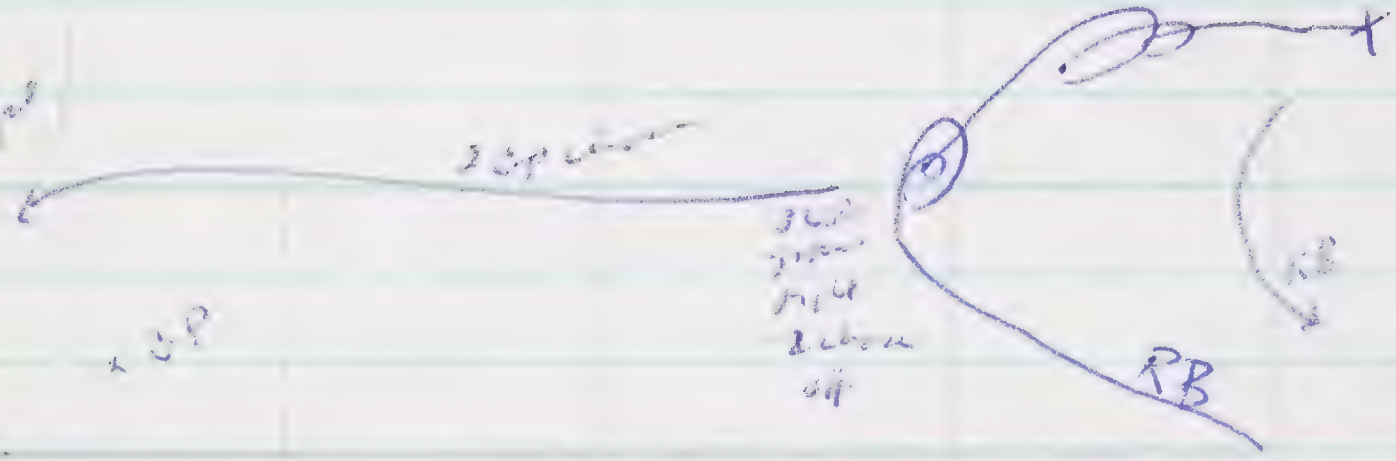
Holmes, R.
1967

13 June

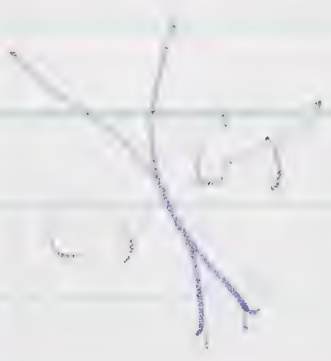


XPS

2.5
miles



4 BS
2.5
↓
↓



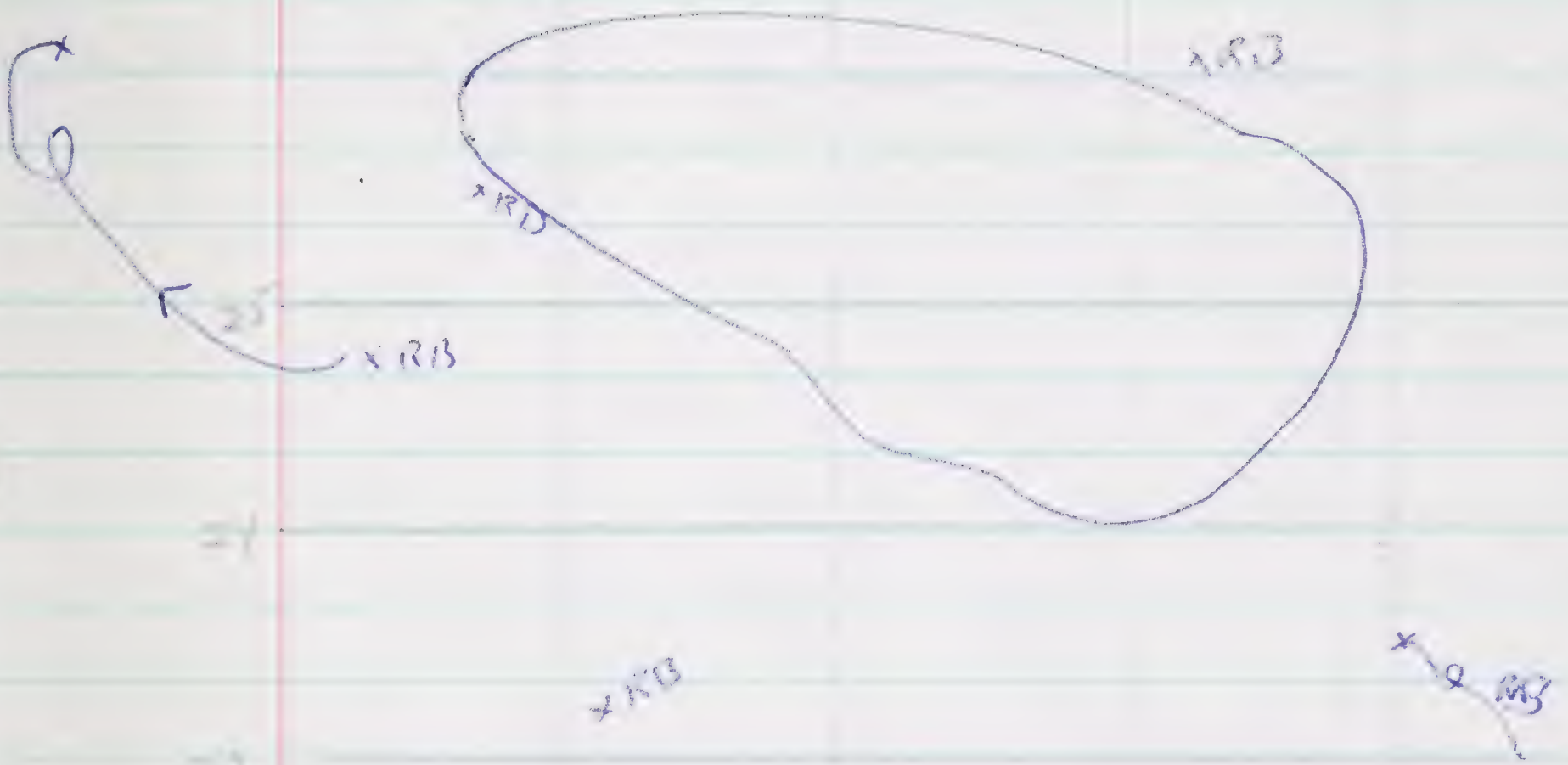
2.5
100 ft

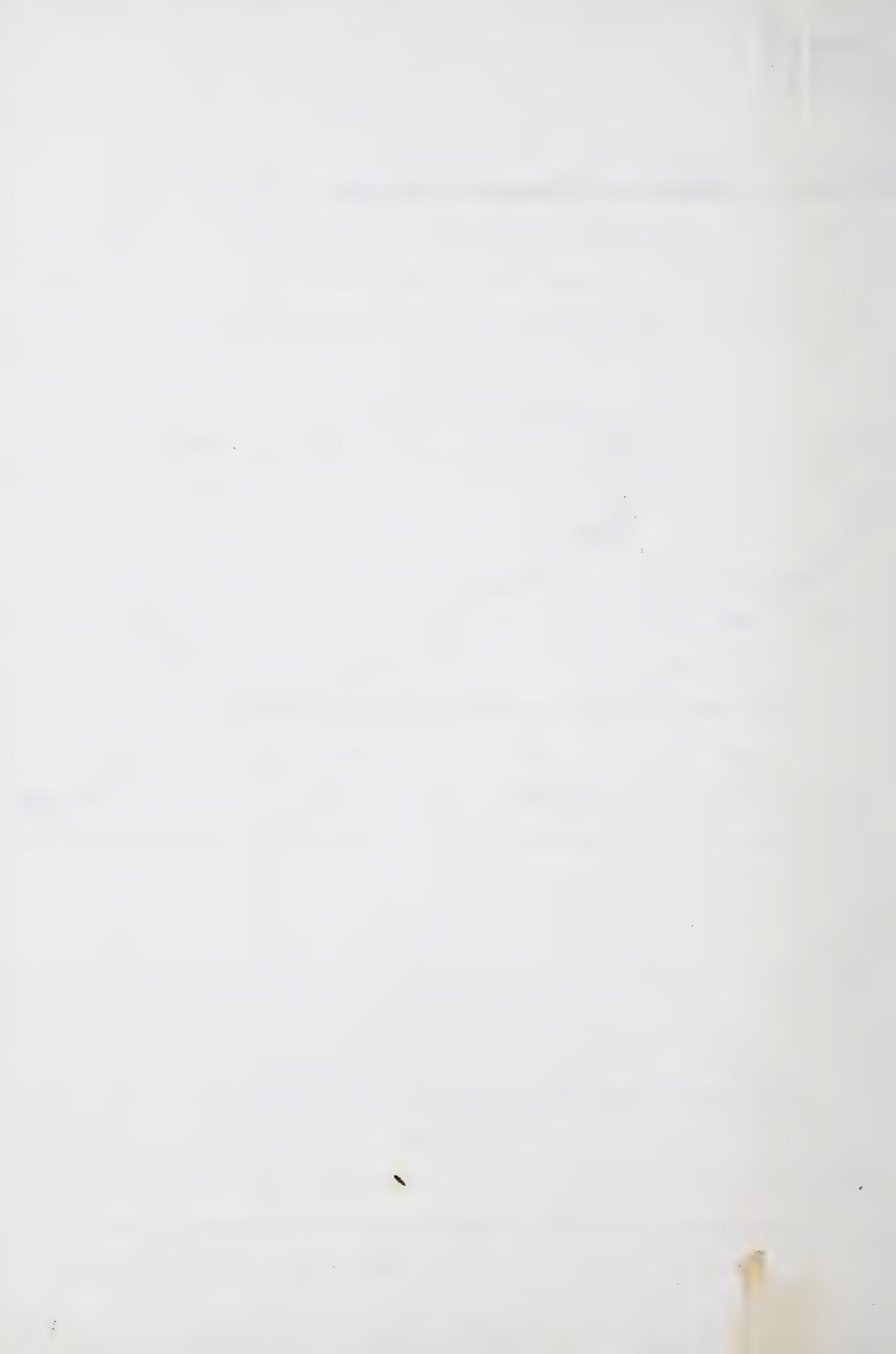
XPS



Holmes, R.
1961

13 June Barrow - Ikroavik, Alaska





Holmes, R.

1961

20 June - Ikroavik, Alaska

1100-1400

8

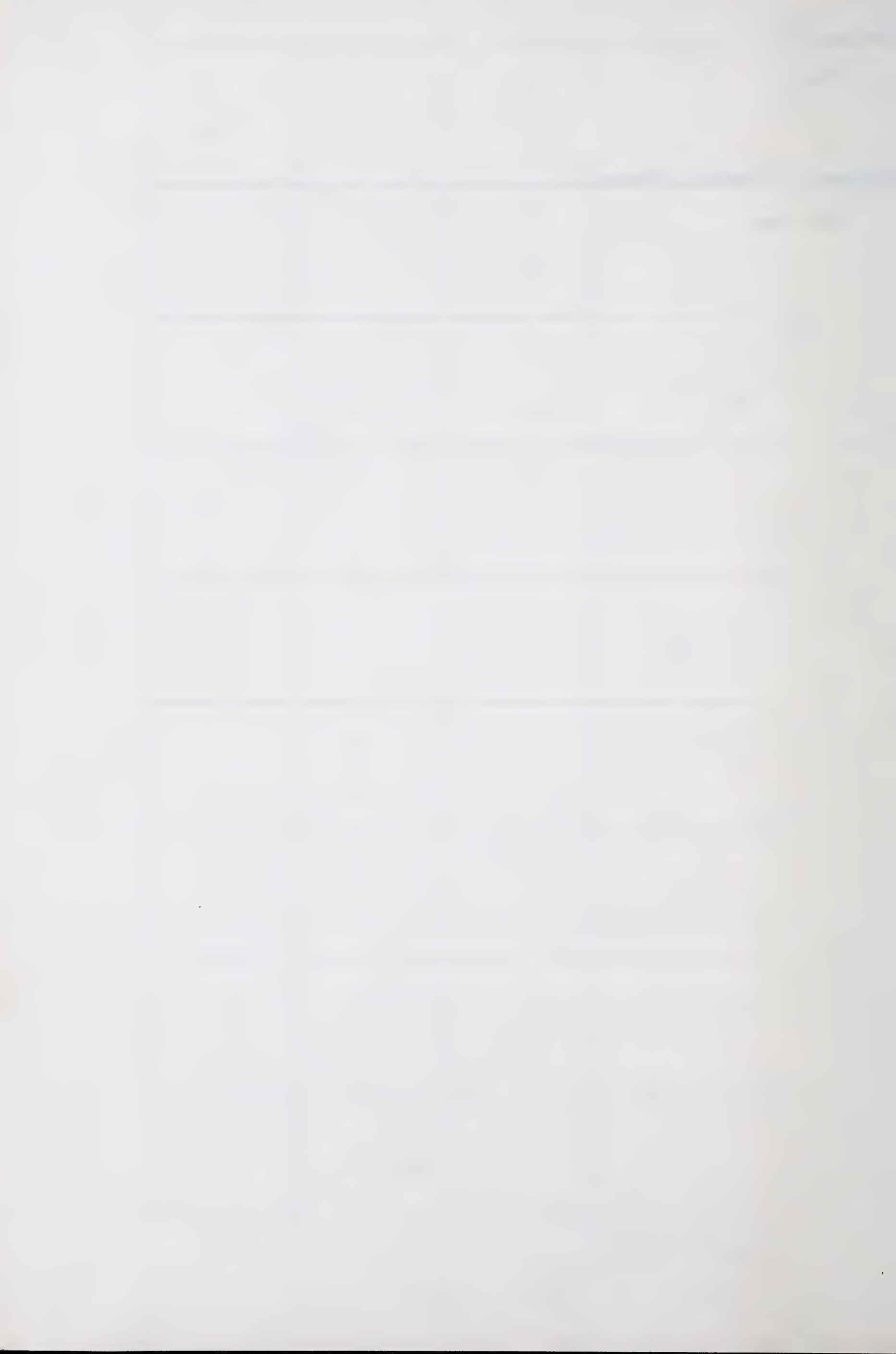
4

2

1

46

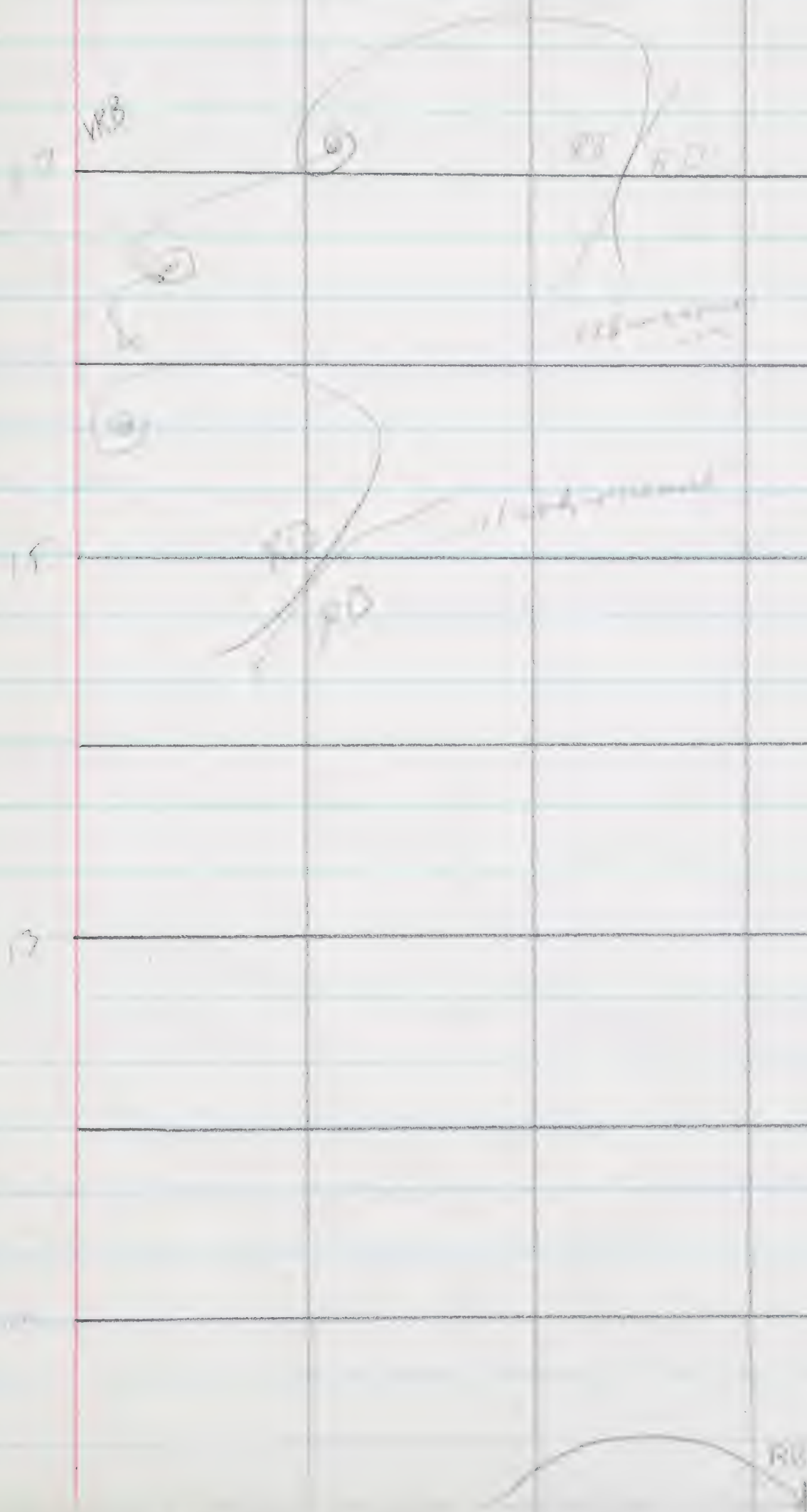
12-51

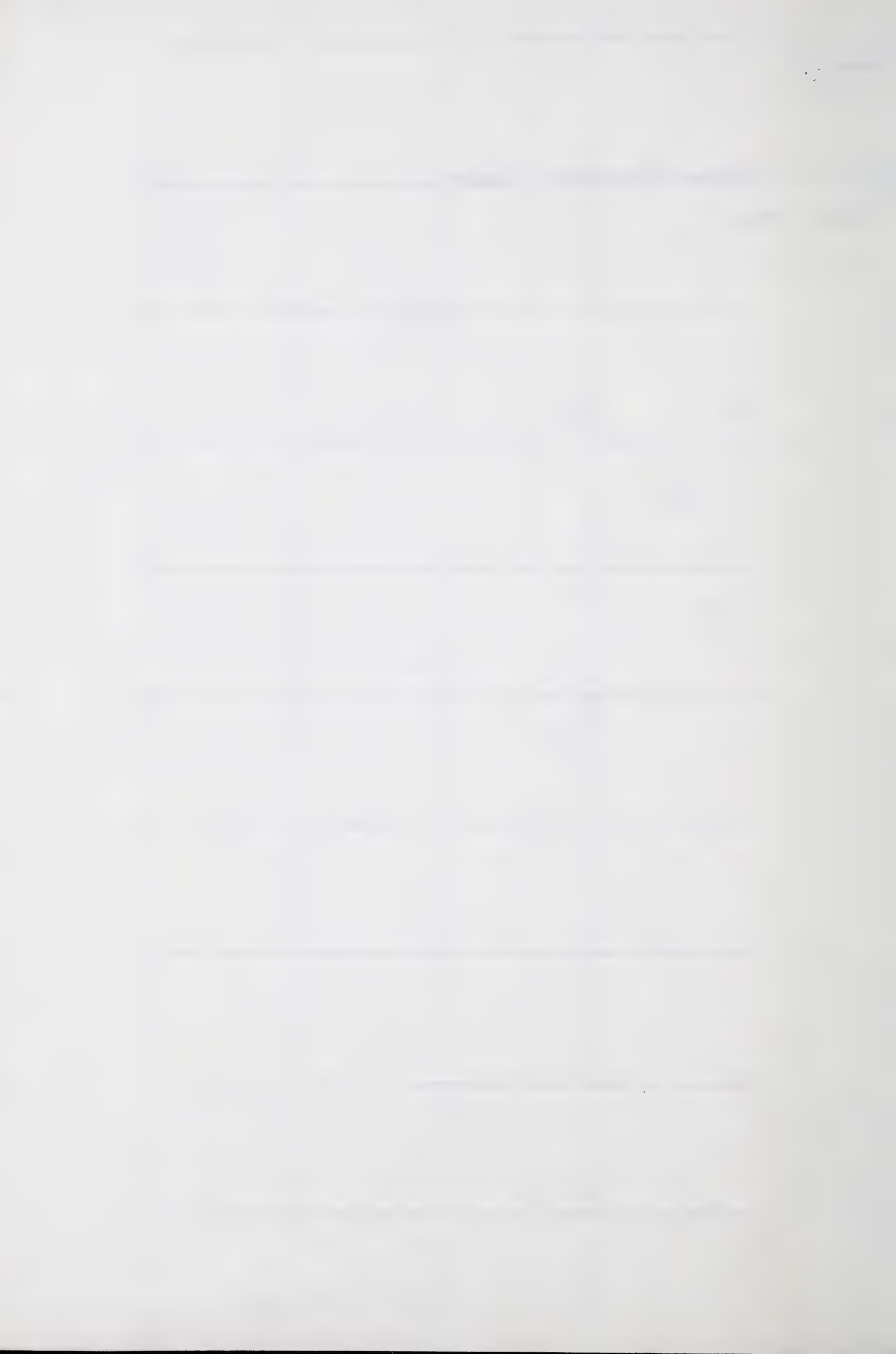


Holmes, R.
1961

20 June Barrow Herodvick, Alaska

1100 - 1400





Holmes, R.
1961

20 June Ikroavik, Alaska

1100 - 1400

25

4

2

RR

10-15 = 100pl - 1000000

RR

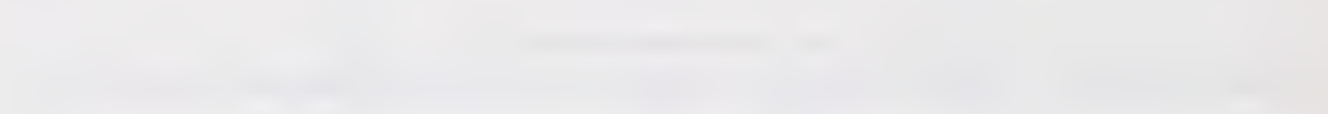
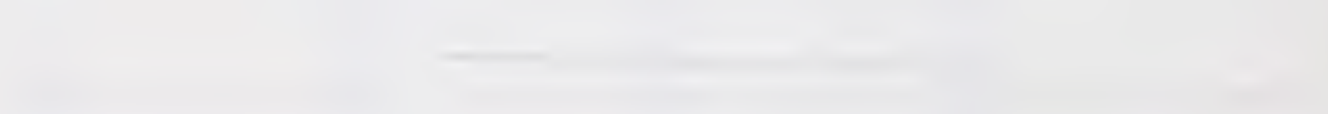
1000000

67

10

Geometrische Optik

1. Reflexion



Holmes, R.
1961

27 June
0900 - 1130

1000
700

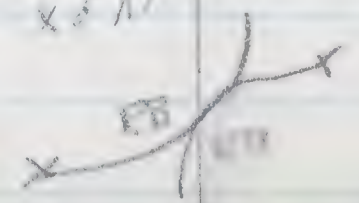
1000

1000

1000

1000

1000



Holmes, R
1961

27 Jun

12

12

12

12

T

B-L-T
2 = 1000

Holmes, R.
1961

27 June

1 pr 0.5g

→ 1000
1000

→ 380
→ 250

24

71

240

22



Holmes, R.
1961

7 July

Abraha

xx-2 RB
excited

8

6

xx
x 3 RB

4

x RB

x 18P-2 RB
excited

2

22

18

16

14

12

x 103

8899 B . 4 2







